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Welcome to Performance PC Magazine, the magazine for the PC connoisseurs. It may seem a little like déjà vu – having seen a new publication Computer Pro Canada from us only a couple of months ago. But a funny thing happened on the way to the printers when we were planning the third issue of Computer Pro Canada – we had enough feedback from our readers to discover that they didn't really think of themselves as professional.

In fact, what tied our readers together was a quest for high performance – and for making the very most of the technology in which they had invested. Publisher Joshua Paul thus took a bold decision (and that's a good thing, because that's what publishers are for – editors concern themselves with important stuff like where the commas are supposed to go and whether or not you need THAT many adjectives in a sentence). He decided to re-title and re-orient the publication around performance. And thus PerformancePC Canada was born.

So what is PerformancePC Canada all about? At its heart, this publication is about choice. And, unfortunately, choice is not always a good thing. In fact, it can be downright paralyzing. I have often pondered the concept of "the tyranny of choice" – which simply means that sometimes you can have so many choices that your time, for a given

period, can virtually be ruled by making that choice.

Well, at PerformancePC Canada, we aim to end the tyranny of choice and make it much simpler for you to make intelligent choices that will help you get the highest performance – and the most fun – from your PC. In the coming issues, we will be exploring these questions – and many others. In this issue, for example, be sure to read Dave Johnson's excellent review of the Athlon-based XP 2500 gamer system from NCIX.

Also in this issue we have a DVD authoring article from longtime technology journalist, musician, broadcaster and all-round techno-guru Givens Bennett, a review from Mike Chin on one of Samsung's trend-setting LCD monitors – and the second chapter of Inside the Bubble (my upcoming book on life in the dot com fast lane from 1999 through 2001). As well, Keith Schengul-Roberts offers a comprehensive review of a locally-based ACT Labs' USB light gun, and Blanche's open letter about free WiFi hot spots.

Also, please check out some new sections: our contributors' "bio" pages give you some background on our contributors, while our hardware review section compares offerings from a variety of vendors at similar price points – and we have a calendar of events with listings from user groups and community organizations. Finally, our new employment area provides job opening and job wanted listings.

And don't forget to enter the contest for the chance to win the system from NCIX online at <http://www.performancepccanada.com/>. That's no easy choice, ...

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## PC USB Light Gun

Manufacturer: Act-Labs ([www.act-labs.com](http://www.act-labs.com))

Price: \$34.99 U.S.

By Keith Schengle-Roberts



If you are into playing classic arcade games, there's nothing like having the right device to match the game. Until recently, if you wanted to play games on your PC originally designed for use with a light gun, you had to use your mouse or trackball. This wasn't much of an option in

games where you end up scrolling around steadily onscreen trying desperately to move your cursor from one side of the screen to the other in order to meet an increasingly impossible challenge in shooter games. For people craving the experience that only a real light gun can provide, Act-Labs' PC USB Light Gun is the answer.

### How It Works

With the exception of old-fashioned guns from the mechanical era of coin-operated games, all arcade light guns work on the same principle: when you shoot you briefly reveal a targeting screen and the gun uses a small photo sensor to "look" for the target in its narrow field of view. If the gun sees it, you score a hit. If not, you'd better shoot again, fast!

In order to make this work, the gun has to interface with your monitor. Directly in order to display that targeting screen, Act-Labs accomplishes this by providing you not only with the gun, but with an intermediary device that you plug your monitor cable into, which then feeds its monitor connection into your PC. The unit also uses a USB connection which not only connects the gun control to your PC but also serves as a power supply for the unit. When you pull the trigger on the gun, it sends a signal to the monitor interface, which reads where the target or targets are supposed to be in the game, and converts it to a targeting spot that the light gun is capable of "reading." To the user, the screen flashes white, the effect designed to emulate a gun

flash, and also provides feedback to the user as to when the trigger has been successfully pulled.

The gun comes with a CD that serves as the product's manual, showing you the steps necessary in order to set things up, as well as providing a simple shooting game as a test, with links to various simple Flash and Shockwave-based games available online. The gun is designed specifically for use with more recent versions of MS Windows (98SE/ME/2K/XP) and once detected by the operating system, all you have to do is calibrate the gun for it to work. It is designed to work with CRT monitors only—if you are using an LCD or Plasma screen display the gun will not work. For those who are using an actual arcade monitor display, there is a new model of the light gun designed specifically to work with TV-style displays.

The gun itself looks snazzy, something that wouldn't look out of place on the set of some low-budget sci-fi show. In addition to the trigger, it has two separate buttons on either side, the one on the left acting like a right mouse button, and the one on the right used for calibration purposes. The position of the left button emulating a right mouse button may seem odd at first, until you realize that this is perfect placement as you can easily use your thumb to activate it—assuming you are right-handed. When not playing a game, the gun acts as a mouse, and you can use it for this purpose, though I found in practice that you had to be a very fine shot or the icons on the desktop had to be set to a large size in order for this to be practical. When you activate the right button you put the gun into calibration mode. The screen goes white, and to properly calibrate the gun for your monitor, you need to pass the gun a few inches from the screen both horizontally and vertically, aiming for the middle of the screen, and going a few inches beyond the sides, in order to "teach" the gun the size of your monitor display.



**Blasted Off!**

While the collection of games that the demo CD links to are fun, and Act-Labs offers some additional shooting games, such as "Mad Dog McCree" and its sequel, this light gun seems to have been designed with fans of the Multiple Arcade Machine Emulator (better known as "MAME") in mind. This popular open source gaming system for many operating systems currently lists 50 or so games designed for use with a light gun, ranging from simple, blocky black and white shoot 'em ups from the late 70s to classic 80s games like *Crossbow* and *Operation Wolf* to relatively recent arcade shooters like *Police Trainer* and *Area 51*. All of these games were designed around light guns, and there's really no substitute when it comes to game play.

While the instructions Act-Labs provides suggests that you only need to recalibrate your gun when you change screen resolution, I got the best performance when calibrating the gun at the start of each new game I played. Many games were designed for screens with very different resolutions than that of a standard SVGA monitor, and recalibrating the gun at the start of playing a new game fixed most problems I had with accuracy. Even after doing that I found that I had some problems with accuracy, finding that I usually had to fire twice before a "hit" was registered. After looking up the problem on Act-Labs' troubleshooting section for the gun on their Web site, I found the likely cause: a misaligned monitor display. After adjusting the shape and speed of my monitor's display, I found that the gun's accuracy went way up – any missed shots from this point on were due to my lack of marksmanship skills, and my scores were more in line with what I remember from playing the actual games years ago in the arcade.

The gun is made of durable though lightweight plastic and is well balanced. The trigger is a bit on the stiff side, and during serious game play I found my fingers soon grew tired from repeated use. The mechanism seems well made and should be put up with a lot of use. The gun worked well and is ideally suited to most shooter games.

**Some Downside(s)**

While Act-Labs' light gun is great, there is still room for improvement. For example, there are a number of games that require you to shoot off screen in order to reload. The Act-Labs gun does not have any automatic mechanism to deal with this, though a clever hack called MAME Analog allows you to re-map the thumb button for this purpose. Though not tested, this same program also enables you to use two Act-Labs guns simultaneously using raw mouse input, so that you and a friend can play some of these at the same time. Considering that many games often need a reload function or have a button on the gun acting as a grenade launcher or similar, it is disappointing that Act-Labs hasn't provided its own full software support for this. I also found the documentation that came with the product to be poor – I would have appreciated even a one-page "connect A to B,

then B to C", or even something that explained the function of the buttons. This information is found on the CD and on the Web site, but when I started for the first time, the calibration function was triggered and all I had was a blank screen, so trying to reference information available only online added to the frustration. Finally – and this is a minor quibble – considering the prevalence of wireless keyboard and other interface devices on the market, it is too bad that Act-Labs' USB Light Gun isn't available in a wireless version. It would require a small battery to power the gun, but the freedom from being tethered to the PC would be worth it.

**Act-Labs' Gun Hits the Mark**

Despite these relatively minor downsides, the Act-Labs USB Light Gun is a good, well-designed product that will reward its user with many hours of intense game play. This Act-Labs product shows that there is an increasing demand out there for people wanting to play classic arcade games, and that there is a sizable market out there that many features can cater to. So far the Act-Labs USB Light Gun is the only player on the market, but it is not likely to stay that way. Having said that, Act-Labs' offering will be hard to beat.

In short, it's a game gun bound to make your trigger finger happy. ■

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## Digital Video Authoring

by Leonard Bernstein



**I**f you're not already familiar with the terminology associated with DVD authoring and playback, be forewarned: you may have a basic

understanding of the difference between recordable (e.g., DVD-R or CD-R) and rewritable (e.g., DVD-RW or CD-RW) technologies and media, but there is much, much more to learn. My apologies for the occasionally acronym-heavy paragraphs that follow — there's so much to describe, and a limited amount of room in this issue!

Here are some of the key points you'll want to consider:

First, there's the question of which DVD recording standard is "best." As I find myself saying in many other cases, the real answer is, "It depends." If you are looking for lower media costs, there's a slight advantage to DVD-R, if you are interested in overall market share or technical superiority, the DVD+R format is slightly ahead. And, if your main concern is cross-compatibility, neither system is perfect, but discs recorded in either format will work on roughly eight out of ten DVD set-top players on the market today.

For my personal system, I hedged my bets by getting a drive capable of supporting both major standards. I bought a Sony drive, however; there are now many other dual-format

DVD±RW drives on the market (Pioneer's DVR-A06 is one of the most popular), and even a few "triple format" models, able to handle DVD-R/RW, DVD+R/RW and the less popular (and less widely compatible) DVD-RAM format.

The relative technical merits of each competing format are widely discussed on various sites around the Internet; I won't repeat them here. The most important point is to be sure that the recorder you get creates discs compatible with the DVD player (or DVD-ROM drive) you intend to use to watch the movies you produce.

There are, however, a few things I've learned over the years that are worth mentioning here:

Windows users are strongly recommended to use a NTFS-formatted hard drive, to overcome the FAT32 limitation of 4GB maximum file size. Thus, you should be running Windows 2000 or XP.

Professional DVD authors typically write out their files to DLT tape and send them to a DVD mastering house for duplication, and may use many thousands of dollars' worth of external tools (e.g., Adobe Photoshop, After Effects, etc.) to develop custom buttons, menus and other advanced features. Most professionally produced DVDs include multiple languages, subtitles, Dolby surround sound and support for dual-layer discs ("DVD-9"), many even

include extra "interactive" content, such as games or other goodies.

Not everyone wants the same thing in a DVD package. Most consumer-level tools include "cinema" interfaces, canned soundtracks and a CD full of "themes." Pro-oriented tools tend to eschew much of the hand-holding in favor of more advanced features, such as Dolby AC3 surround sound support and chapter markers. You probably won't get these features with the simple authoring tools bundled with inexpensive DVD recorders, but they're easy to add later, if you need them.

### Other Recordable Formats

Any DVD writer on the market today can also create standard CD-R and CD-RW discs. Thus, you can, with the appropriate software, use it to produce a wide variety of other discs your set-top DVD player may be able to handle: most players can handle VCD (MPEG-1), SVCD (480x480-pixel MPEG-2) or miniDVD (720x480-pixel DVD-quality MPEG-2 video and audio on a CD) discs, too. Most DVD players can handle JPEG picture discs, MP3 compilations and CD-audio discs, a few can even play DivX and MPEG-4 movie discs.

Chances are good that some or all of these formats can be created with the software supplied with the DVD writer you choose. Ahead's Nero, for example, provides a VCD export option directly from your AVI or





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MPEG source material and works with almost all third-party drives. (There are far better movie encoding tools, though.) Encore's Easy CD & DVD Creator provides similar capabilities.

Unless you are intending to author discs aimed at the professional DVD market, with advanced features such as multiple language tracks, region codes, copy protection, multiple angles, interactive menus and other specialized features, you probably won't appreciate the additional complexity these features introduce into the disc creation process. For home DVD-recording applications, a simpler and less expensive application will be easier and more enjoyable to use.

I've used virtually all of the DVD authoring tools on the market. My favorites on the Windows platform are Ulead DVD Workshop, Adobe's Encore DVD and Sonic Foundry's integrated video editor and DVD builder, Vegas + DVD.

All of these tools venture into the "prosumer" category, with support for chapter markers, motion menus, multiple aspect ratios, AC3 audio, and other advanced features. Fortunately, all are fairly easy to use. I'm currently using the Sonic Foundry title for most of my work, however, I've recently been testing another program that shows great promise.

Offered by Mediachance, a little-known Canadian developer, DVD-Lab is remarkably powerful, with a lot of pro-oriented features. It is also priced very attractively, at an introductory price of \$79 (regularly \$99). It has a flexible, no-nonsense interface that is squarely targeted at professional users, while remaining easier to use than Adobe Encore DVD (US\$349 for Windows XP) or Apple's US\$499 DVD Studio Pro 2.0, a leading package on the Mac side.

DVD-Lab uses a drag-to-link metaphor that is easy to learn and quick to master. It supports many advanced features, including motion menus and background audio tracks for menu screens and, via a nifty Menu

Wizard feature, some of the coolest menu-building templates of any program this side of Apple's iDVD. It comes with a set of easy-to-follow tutorials.

There's not much to complain about in the program other than the lack of support for multiple audio tracks. I asked "Oscar," the Ottawa-based author of the software about this issue and he replied, "although the flexible muxing in 1.2.2 internally supports multiple channels, they are disabled at this moment. First I want to really make it reliable and then later multiple channels and subtitles will be added."

Oscar says he is adding slideshow support with "quite a nice set" of features, such as background, drop shadow or customized text for each slide. There's also slideshow support for 16:9 aspect images. See <http://www.mediachance.com/dvd/lab/history.html> for an overview of other recent changes to this hot new program that should have the big players in the market rethinking their pricing strategies. DVD-Lab runs on Win 98/NT/2000/XP. Recommended.

DVD Workshop (Windows) Ulead's DVD Workshop (US\$249) is another great value. It provides a better feature-set than its competitors, with an interface that falls only a little short of the remarkable ease-of-use of DVD Architect (noted below). It's a great choice for those wanting a program able to write DVD, miniDVD, SVCD or VCD data onto DVD recordable/

overtable or CD-R/RW media. Recommended, but those looking for a full-featured video editor with basic DVD authoring functionality should also check out Ulead's Media Studio Pro 7, which includes a version of the company's no-frills DVD builder, DVD MovieFactory. Trial versions of both programs are freely downloadable from [www.ulead.com](http://www.ulead.com).

DVD Architect (Windows) Sonic Foundry's DVD Architect works as an add-on to Sonic Foundry's excellent video editing package, Vegas 4.0. The product's interface is great—very easy to learn, with an interface that is both customizable and blessed with sensible defaults. As is common in many video products, it has a feature set that is a mix of strengths and weaknesses. On the plus side you can mix 16:9 and 4:3 video on the same disc, and its Multiple GUI Render Script allows you to set up all-night rendering sessions with ease, then quickly drop the results onto your disc,



with text and icon styles all ready to go.

On the downside, there are some limitations that lessen its application as a professional tool: there's no way to add multiple audio tracks or multiple video angles, and chapters have to be set a submenu, unless you resort to the ingenious workaround discovered by "Samman" in the rec.video.desktop newsgroup: create a sub-menu with chapters, then go to that menu, copy the links, go back to the main menu, and paste them there. Delete the sub-menu and presto, you have chapter links on the main menu. Video clips always return to the main menu by default.

Although DVD Architect 1.0c does not support some of the advanced requirements of those aiming to produce copy-protected masters and lacks support for miniDVDs, SVCDs and some other features of Ulead's feature-laden DVD Workshop, it's my recommended choice for most users who want a no-nonsense DVD authoring tool that integrates well with



Vegas Video — one of the best video editing tools on the market. An Academic edition of both programs is available for less than half the regular

price (at this writing, the academic release sells for about US\$285). The US\$695 price noted here is for the downloadable version of Vegas +

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48 MB Multimedia Keyboard & Optical Mouse  
10/100Mb's PCI Network Card  
Digitality 6911000 Pro-S for P4 CPU  
Digitality 79400L RForce for AMD CPU  
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#### DVD Copying

Although I'm delving into dubious legal waters here, the fact is, some users may want to back up a DVD they legally own. There are no programs as powerful and straightforward to use as 32iSoftware's DVD X Copy (US\$99 after rebate), although Pinnacle Instant Copy (US\$49) comes closest. The main difference between the two is the fact that the Pinnacle cannot duplicate a copy-protected DVD (which virtually all of them are!). You have to first rip the DVD data to hard disk and then let the Pinnacle program do its work. This makes it significantly less useful than DVD X Copy, which does everything in one simple step. Both programs are best suited to copying single-sided, single-layer DVD-5 discs. Multi-layer, multi-sided disc sets require multiple DVD-recordable blanks. In both cases, the resulting DVD discs will play in most set-top or computer-based DVD players.

For users with a DVD recorder, DVD X Copy 1.5a is the title you're most likely to be satisfied with. It reproduces (most) discs with virtually all original features intact, with a minimum of fuss — and, at full quality. If you don't want to use more than one blank DVD-R disc for your copy and don't mind giving up multiple languages, trailers and extra features, the company also offers DVD X Copy Express, which always

produces a one-disc backup, with a slight reduction in quality, if necessary, to achieve this goal.

There are also a number of PC-based tools on the market that allow you to remove Macrovision, region coding restrictions and/or CSS encryption from your DVD copies. The DivX-and-MPEG4-compatible LiteOn LVD-2001 set-top DVD player I picked up recently even has a hidden firmware feature that allows Macrovision and region coding to be disabled with a few clicks of the remote. (Hint: Press Open/Close on the remote control, then press [2] [9] [6] and [0].)

Beware, however, of titles that do only part of the job. DVD2One, for example, claims to be the fastest DVD processing tool available for Windows PCs. The company boasts that it can copy a DVD movie — even one that normally wouldn't fit on a 4.7GB blank — to a recordable disc in 30 minutes or less on a reasonably fast computer.

Now, perhaps it won't bother you, but the "How to Use" section of the DVD2One website certainly puts me off. It says "Most DVDs are encrypted and need to be decrypted before you can process them with DVD2One. Since decrypting DVDs can be against the law in your country, this part is not included in DVD2One. You will have to search the internet to find a program that can do this job." It doesn't burn the files to disc, either. For that, you'll need another utility, too. In other

words, you need to get other software to get the job done, anyway. In the next section, we'll look at some of the best titles in this category.

#### Creating DivX Rips

Interested in creating digital video discs but don't have a DVD recorder? You can store your videos on CD-recordable media, with surprisingly good results. DivX is a popular and highly efficient compression format (technically, a "codec") that can fit a full-length "near DVD quality" movie on one or two CDs. For the PC, the fastest and easiest tool I've found for ripping DVDs to CD is the US\$25 DVD-to-DivX. If you are looking for a free solution, or, if you prefer ultimate control, there are a number of free tools that will also do the trick. Try a Google search for "Finny2001's DivX Newbie Guide" to get started.

Another good choice is Super DVD Ripper, a \$36 shareware title. It can copy DVD to DivX AVI, MPEG-1 or MPEG-2 files. Super DVD Ripper can also copy DVD to VCD or SVCD, for a backup DVD copy on CD, which can be played in your DVD player. You can use the program six times before you have to register.

There are many other tools, most of which support saving in a variety of common formats, including DivX, VCD, SVCD, etc. DoomWare has a huge list of options, tutorials and links. Another collection of links and

Continue on page 15

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## Samsung SyncMaster 173T

**Product:** Samsung SyncMaster 173T (black)  
**Manufacturer:** Samsung  
**Supplier:** Samsung Canada  
**Market Price:** \$525 US

By Mike Chin

*Mike Chin, a professional technology writer, is available on demand in Vancouver, as the creator of the website [www.MikeChinPCReviews.com](http://www.MikeChinPCReviews.com), the web's best for all things PC; contact at [computer.writer@telus.net](mailto:computer.writer@telus.net)*



**T**he Samsung SyncMaster 173T is a sleek ultra-thin LCD display with digital input. Also in silver, this monitor has the

modern, minimalist look that Samsung has utilized in all of its products lately. The digital input, which helps signal transfer integrity between VGA card and monitor, suggests that this is at least a midrange model.

As you can see from the photo above, the Samsung SyncMaster 173T has a stand that is found in many of their newer models. When first pulled out of the box, the stand is folded flat and it looks like this from the back:

The base only has to be pivoted 90 degrees, at which point it locks into place automatically with a spring-loaded metal rod. The end of this rod becomes an unlock button that has to be pushed to fold the base back up.

There is a miniature "lazy Susan" type of turntable on the bottom of the base that allows the monitor to be rotated easily. The stand has the same pivoting feature, which along with the

supplied Pivot Pro software, allows the monitor to be switched easily between portrait and landscape modes. This view is great for reading text and most other documents meant to be printed on letter or legal sheets, and for viewing many web sites.

### CONNECTIONS & CONTROLS

Six button controls are positioned on the bottom portion of the bezel. There is a small green LED light that indicates power.

The right button is the power switch.

The left Auto button provides an auto adjustment. From the manual, "Auto adjustment allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically."

The Exit/Source button does double-duty as a "back" button when you're in the on-screen menu, and to switch between digital and analog inputs.

The third button from the left functions as a "+" (minus) button in the menu and as a "MagicBright" button when pressed outside of the on-screen

menu. It allows you to preset brightness to manual, Text, Internet and Exterior modes.

The other buttons are self-explanatory.

The power input jack and the digital & analog inputs are located on the back panel, in a recess that faces down. >5' length cables for all three are included. Access is easiest with the monitor screen rotated to the portrait position as in the photo below.

One aspect of the 173T is that the 4-screw plate to the base conforms to a 100mm x 100mm VESA-compliant mounting interface pad. This means that it can be used with a standard wall mounting bracket for monitors.

### USABILITY

The Samsung 173T is pleasant to look at, takes up only a tiny part of your desktop, requires no weightlifters to move around, doesn't cost an arm or leg, consumes only 40W (less than half of the ~100W or more of a typical 19" CRT) gives you instant portrait viewing mode and has zero geometric distortions.

The overall quality, brightness and

sharpness of the 173T is excellent. It easily exceeds the clarity and overall usability of my best current 19" monitor, a "Pure Flatface" screen that has .21mm (h) dot pitch and very good overall sharpness and contrast.

In comparison with another Samsung 17" LCD monitor in analog mode, with a Matrox G550 32mb dual-head display providing the input, and the display set to the native resolution of 1280 x 1024, the performance difference is extremely difficult to distinguish. Perhaps the higher contrast of the 173T comes through in some high quality 4 meg photos.

In the digital mode, the difference is more apparent.

With analog input, neither of the monitors could properly display 1280 x 1024 at 32-bit color. It had to be set to 24 or 16 bit. With the 173T digital input, there was no problem whatsoever with the 32-bit setting, which provides a wider range of colors.

The higher contrast specified for the 173T was more apparent, probably because it could display 32-bit color. Some images did appear with more vividness.

Some fonts appeared somewhat easier to read.

DVD playback may have been slightly smoother.

There is very little or no perceptible difference in brightness between center and edges; the consistency is excellent. The viewing angles are wider on the 173T as well.

## CONCLUSIONS

The Samsung SyncMaster 173T is a very good LCD monitor, excellent all-around performance, digital input for top resolution input, absolutely no noise, and a powerful pivoting feature. This stylish monitor takes up minimal space and the built-in power supply eliminates the need for another transformer box from the clutter under the desk. Samsung backs up the unit with a 3 year warranty for parts, labor & LCD backlight. ■

## SPECIFICATIONS

<b>PANEL</b>	Panel Type Size Pixel Pitch (mm) Brightness (cd/m2) Contrast Ratio Viewing Angle Aspect Ratio Response Time (ms) Interface	and TFT /TN 17" 0.284 250 cd/m2 700:1 170 / 170 4:3 25 Analog / Digital
<b>FREQUENCY</b>	Horiz. Rate (Analog) Horiz. Rate (Digital) Vertical Rate Bandwidth	30-81 30-83 56-75 135
<b>RESOLUTION</b>	Maximum (Analog) Maximum (Digital) Native	1280 x 1024 1280 x 1024 1280 x 1024
<b>COLOR</b>	Maximum	16.7 M
<b>SIGNAL INPUT</b>	Input Video Signal Video Level Analog Video Level Digital Sync Type	Analog RGB, DVI Digital link 0.7Vp-p TMDS™ Separate H/V, Composite H/V
<b>PLUG &amp; PLAY</b>	Input Connectors DDC	15pin D-sub DDC 2B
<b>POWER</b>	On/Working	40 Watts (Max)
<b>REGULATIONS</b>	Safety  EMI/Emissions  Emission Standard	UL 1550, CE, CSA, TUV, NIMKO, ENEC, PSB, GS1, SIO, FCC, NOM, IRAM, SASD FCC, CE, NMR II, VCCI, MKC, BSMI, CHICK, E8 TCD 35
<b>DIMENSIONS</b>	Physical (WxHxD)	14.5" x 15.5" x 7.0"
<b>WEIGHT</b>	Net (Physical)	11 lbs
<b>FEATURES</b>		Dual CPU input, built-in power supply, narrow bezel, pivot technology
<b>WARRANTY</b>	Parts/Labor/Backlight	3 / 3 / 3 years
<b>COMPATIBILITY</b>	Operating Systems	Windows Macintosh Sun Microsystems

## Digital Video Authoring

Continued from page 12

tutorials is found at the DVD Ripping section of DVDRIHelp.com. See <http://dvd.rihelp.uk/> for even more options.

## Other Conversions

If you'll be capturing clips from television or working with your own movies, you'll want a tool for converting one video format to another, joining or splitting video clips, and so on. One of the best is the US\$35 BD Video (co-video.com), which handles all of the major video, audio and bitmap formats (AVI, MPEG, QuickTime, Real Media, WMV, ASF, Jpeg, GIF, MP3, etc.). It allows you to join fully matched AVI and MPEG clips and supports the popular DVD-compatible output format CVD. The package also includes a free player.

## VCD, SVCD Authoring

It is possible to produce VCD and SVCD discs from other video sources with many of the commercial movie-making and DVD-authoring tools for Windows PCs, such as Instant DVD Maker, Movie To CD & DVD, Pioneer Studio 8, Ulend DVD Movie Factory, Nero Burning ROM, etc. The best free tool I'm aware of in this category is DVD2SVCD. It supports Windows 95/98/MaNT/XP/2000.

With it, you can:

- Encode in MPEG2 but use MPEG1 (VCD) when authoring and authoring
- Convert DVD to SVCD and VCD

- Convert AVI to SVCD and VCD
- Convert from NTSC to PAL
- and more.

It includes:

- Support for 2 audio streams
- Support for subtitles, SVCD, CVD and permanent subtitles
- Support for chapters. Both DVD chapters and fixed chapters.
- Support for Telepresence and Change CD picture
- Support for making overlapped CDs

Get it at [www.dvd2svcd.org](http://www.dvd2svcd.org)

There are a number of other free-ware and commercial tools providing VCD and/or SVCD support. VCDflay is one of the most popular. Another is cludDVD.NET v3.2, which is a DVD ripper that can pretty much rip (i.e., decode and save the video from) any DVD just the way you want. It can rip files in both DISK mode and FILE mode. cludDVD.NET also includes many extended options, such as 'Multi-Angle,' detection of 'Mastering Errors,' 'MacroVision' removal, 'Key-Search' automation and 'Audio Stream' re-mapping. It even includes a 'PostServe' option, giving direct control and execution of the DVD2AVI program (included) to aid in the process of converting to a DevX AVI or Video-CD by creating the 'DEV' and 'WAV' file. cludDVD.NET is a .NET application and runs on Windows XP/2000 only.

There are so many tools that are to make the process of converting movies directly from DVD to DevX, VCD or SVCD a snap, it's hard to pick a single

side that's better than the others. If I had to pick, I'd probably pick one of the free titles, though — there really aren't any commercial titles in this category that are significantly better. There are, however, quite a few rip-offs, in which unscrupulous companies simply bundle a few of these free tools together with brief tutorials and perhaps a menu screen for \$30 or so.

It's also worth mentioning that quite a few of these DVD-copy utility vendors offer generous kickbacks — as high as US\$32 per sale — to websites who advertise their products. So, be wary of the five star ratings you might see associated with some of the more dubious offerings, such as DVD Copy Plus, Replicant, DVD-Squeeze 3.0 or the infamous DVD4CopyOne.

## Linux tools?

There is much more that could (and should!) be said about the intricacies of encoding and transcoding video. And I haven't even touched upon the topic of tools for Linux. These topics, I'm afraid, will have to wait for a future column. I will say, however, that serious video work on Linux seems a little too tricky for me. (This is also a caveat I think applies to many of the free tools available for Mac OS X.) Refer to the documentation at DVDRIHelp.com if the topics described in this article have piqued your interest, or you're having trouble getting started. Until next issue, happy movie-making! ☺

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# Part LXXXIX - Text Formatting and CSS3

By Keith Schengels-Roberts



Probably the single most prominent development trend in the creation of a CSS3 specification is that of international text and character formatting. There are a lot of things in the current CSS1 and succeeding CSS2 specifications that do not allow for proper layout for international text. Many of the new, proposed CSS3 text-formatting properties are aimed squarely at remedying this situation.

It should be remembered that at the time of writing, CSS3 is still very much a work-in-progress, and the names for properties and features may well change by the time they make their way to an actual browser that implements them. Still, if you want a "head's up" as to what is coming, this article will give you some idea as to developments in this area.

Formatting the Dangly Bits (of a Paragraph)

One of the most interesting things about the proposed `text-align-last` CSS3 property is that you can actually play with it now – if you are using a recent version of Internet Explorer at any rate. The `text-align-last` property is designed to alter the way the very last line of text in a given paragraph is formatted. It is meant to be used in conjunction with the commonly-used `text-align` property, but it overrides its behavior when it comes to the final line of a paragraph.

Under Internet Explorer the `text-align-last` property has a total of six values: the five belonging to `text-align` – left, right, center, justify and inherit – and an additional `auto` value. This last value is the default, setting the final line of text to whatever value has been

set for `text-align`. It should be noted that the default layout for the last line of text in a paragraph in Internet Explorer – even when the text is set to `text-align: justify` – is to align the text the left. To see the effect of the `text-align-last` property at work, try out the following example code:

```
<html>
<head>
<title>text-align-last
```

```
Example</title>
<style>
body {font-size: 18pt}
</style>
</head>
<body>
<p style="text-align: justify">

```

This line contains justified text. To ensure you can really see the effect of this, we need a few sentences so that the effect can easily be seen. Despite the fact that the `<code>text-align-last</code>` property is not being used, the default behavior is that the last line is `<code>auto</code>` justified.

```
<p>
<p style="text-align: justify, text-align-last: center">
```

This line contains justified text. To ensure you can really see the effect of this, we need a few sentences so that the effect can easily be seen. This paragraph uses `<code>text-align-last</code>` set to `<code>center</code>`, so the last line is centered.

```
<p>
<p style="text-align: justify, text-align-last: right">
```

This line contains justified text. To ensure you can really see the effect of this, we need a few sentences so that

the effect can easily be seen. This paragraph uses `<code>text-align-last</code>` set to `<code>right</code>`, so the last line is right-aligned.

```
</p>
</body>
</html>
```

As you can see, the first paragraph only used the `text-align: justify` – duplicating the default behavior of left-justification in the final line – and the other two paragraphs clearly show the effect of the `text-align-last` property.

The `text-align-last` property has also been adopted within the text module of CSS3 – which may explain why Microsoft has jumped the gun a bit, but the W3C currently uses a slightly different naming scheme for it. Internet Explorer uses the values `auto`, `left`, `right`, `center`, `justify` and `inherit`. The CSS3 equivalent values for this property are `normal`, `auto`, `start`, `end`, `center`, `justify`, `inherit`, `initial` and `size`. In this case Internet Explorer's `left` and `right` values are the same as CSS3's `start` and `end`. Part of the reason for the change is that programmatically speaking, terms like `start` and `end` make more sense when you are formatting a page using an international character set that orients it text vertically. What exactly does `right` or `left` mean when you have a bunch of Japanese characters that flow from top to bottom? The other major differences have to do with the `initial` and `size` values. The `initial` value is CSS3's way of specifying the default value for a given property (which in this case is also `auto`), but the `size` value is different, when `text-align-last` is set to `size`, the browser is supposed



to scale the content on the last line to fit across the whole of the line – which means that the font size for the text in the final line may be changed in order to help make the text stretch across it. In order to set constraints on how much (or how little) the browser should scale the size of the font, CSS3 also introduces the `min-font-size` and `max-font-size` properties to set minimum and maximum font size to be applied in this case. This last value comes into play with another two proposed CSS3 properties: `max-font-size` and `max-font-size`.

#### Even Finer Adjustments

You might think with a name like `min-font-size` and `max-font-size`, these newly proposed CSS3 properties would be used for setting the minimum and maximum font size that could be used globally on a page – perhaps in cases where you have a dynamic value assigned to stretching or squeezing font sizes. Instead, `min-font-size` and `max-font-size` are designed to be used

in a very specific case: they are only for use in conjunction with the `text-align-last` property when it is set to `size`.

`text-align-last: size` tells the browser to stretch or squeeze the content on the final line of text in a paragraph (or some other block element) so that it fits across the line. This includes changing the font size of the text in order to make that content fit. So the `min-font-size` and `max-font-size` are used to set the upper and lower constraints. Both `min-font-size` and `max-font-size` can take one of four values: a specific numeric font-size value, `auto` (the default), `initial` and `inherit`. `initial` and `inherit` are values common to all CSS3 text properties – `initial` is used to explicitly set a property to its normal default value, and `inherit` takes on whatever parent value may already been set for the property. The `auto` value means there is no default limit to the maximum or minimum size for the font. You can expect to use the numeric font-size

value the most with these properties, as they give you direct control over how much a font in the final line of text in a block element can be re-sized. The following code snippet provides an idea as to how you can expect to use these properties:

```
<style>
text-align-last: size
min-font-size: 10pt
max-font-size: 30pt
</style>
```

Next time: The final installment on International Text Formatting in CSS3.

*Keith Schengeli-Roberts is the author of Core CSS, 2nd Edition, recently published by Prentice Hall. For more information, see [www.corescss.com](http://www.corescss.com). This article is a continuation of the long-running "Web Weaving" series that originally ran in The Computer Paper, one of the longest continuing series on the Web authoring, which started back in 1994. ■*

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a novelty, as the motherboard and CPU will shut the computer down automatically if the heat reaches dangerous levels. The 300W power supply provides plenty of juice, and the folks at NCIX did a great job with the system they sent us of tucking in all the ribbon cables - so there's no unsightly mess, and no barriers to good airflow.

A warning to parents of small children, cat-owners and those with reckless friends: the grating covering the top and side fans is quite open. It is not hard to get a finger or paw into either fan. The blue light makes the fans sort of enchanting, and junior may want to touch. Ah, the lure of shiny things.

The system sports a ATI Radeon 9800 graphics card, the high end of ATI's newest line of DirectX 9 ready GPU's. ATI has spent the rule of the long reigning GPU king, nVidia, in the

last year or so - and this is their penultimate card, so you can't buy much better. There aren't any games out yet that are taking advantage of the fancy graphical tricks that DirectX 9 allows, but be assured that having a DX 9 card now means you won't have to upgrade in 6 or 12 months when DX 9 games do hit the shelves.

One area the new generation of cards (the 9800 series from ATI, and nVidia's 3000 series) really shine, without fancy DX9 tricks, is when you crank up the anti-aliasing. Anti-aliasing gets rid of the jaggedness of diagonal lines you usually see with computer graphics - but it takes a lot of horsepower to perform the magic, and this card has horsepower in spades. Anti-aliasing makes games like Homeworld 2 look much, much better - no distracting "jaggies" crawling across your screen, only nice smooth lines. I

had no problems playing these games with the anti-aliasing cranked up to the max setting of 8x. After playing with anti-aliasing on for a while, it's hard to go back to the jaggies.

NCIX chose the Asus A780X Deluxe motherboard for this system, and it's hard to argue with their choice. Asus has been putting out reliable motherboards, with all the bells and whistles, for years and this board is no exception. It uses the nVidia nForce2 Ultra 400 chipset, which is as fast as it gets for boards supporting AMD's Athlon processors.

One of the best selling features of the nForce chipset is its dual channel RAM architecture. This theoretically allows the RAM twice the bandwidth of the standard single channel. Add this to the support for 400MHz DDRAM and a 400 MHz front side bus (FSB), and you have the fastest board around for the



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DIMM's instead when you upgrade?

The board also has a number of other nice current generation features. Serial ATA RAID, USB 2.0, 2 onboard Ethernet ports, and onboard Dolby 5.1 sound. Asus is also well-loved by overclocking fans for their BIOS support for tweaking multipliers, bus

speeds and RAM settings – more on those possibilities to come. The motherboard will also talk to you if it's having problems, which is a little surprising if you don't expect it – but the talking error report is a vast improvement of the old system of trying to figure out cryptic beeps when

your computer won't start.

The hard drive NCIX has chosen is the Seagate Barracuda – a choice I'm not fond of because it's an IDE drive rather than Serial ATA (SATA). It's a curious choice because the AT880X motherboard supports SATA and even has a built-in SATA RAID controller

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<p><b>60 Silver 152 Optical Mouse</b> <b>\$54.99</b></p> <p>• 60 Silver 152 Optical Mouse • 60 Silver 152 Optical Mouse</p>	<p><b>Vision Intel P4 2.88 GHz Server</b> <b>\$1643.99</b></p> <p>• Vision Intel P4 2.88 GHz Server • Vision Intel P4 2.88 GHz Server</p>		<p><b>Sony 10000 BT 2000000</b> <b>\$136.99</b></p> <p>• Sony 10000 BT 2000000 • Sony 10000 BT 2000000</p>

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SATA is the new standard for hard drive I/O, and it's got several advantages over IDE: SATA cables can be longer and allow better airflow, don't get damaged as easily, their hot-pluggable, and SATA has higher theoretical transfer speeds.

Of course, the performance of SATA isn't noticeably faster than Ultra ATA at the moment, due to limitations of the hard drive speeds. The price is also a bit higher (approx. \$30), and the technology isn't as well tested. But, if you think you may want to go RAID now or in the future, you may want to ask about buying up to an SATA drive, or you're going to need to get an IDE RAID controller & another IDE drive, two new SATA drives, or an IDE to SATA adapter.

And now to the brains of the system – the CPU. The Athlon 2500+ (Barton core) may not seem like the ideal choice for a gaming box – sure it's cheap, but does it have the horsepower that current and future games will need? Well, of course the 2500+ has enough power for any game out on the market today, but what about tomorrow? The real beauty of this chip lies in its capacity to overclock.

The enthusiast community has quickly embraced the Athlon 2500+, because it's very overclockable, and it's very cheap. With a little musing on the Internet, the standard heat sink provided with the fix, and some quick BIOS changes, this processor can be drastically overclocked. The system we had effortlessly went from a 2500+ (@ 1.0GHz) to a 3200+ (@ 2.2 GHz) just by bumping the standard 166MHz FSB to 200MHz. Heat was no problem with this case and the motherboard, RAM and CPU are all well up to the task.

The processor that NCIX provided us was "pre-burned", meaning that it has been slowly stepped up from it's standard speed to it's overclocked speed of 3200+. This makes the system much more stable than going straight from 2500+ to 3200+. Also, the amount a chip can be overclocked varies from chip to chip, so pre-

burning assures that you can at least reach the 3200+ mark. NCIX sells the pre-burned chips for an additional \$20.

During the two weeks that I tested the system, including our day-long LAN gaming session, I never had any problems with the stability at 3200+ – except for one mysterious reboot while playing *Wolfenstein III: Enemy Territory*.

Note - overclocking does void any warranty on your CPU and motherboard, so it may be something you want to save until you're thinking of upgrading anyway.

The RAM provided with this system is high-quality PC3200 CAS2 DDRAM. Often stability problems due to overclocking the FSB can be attributed to the RAM not being able to keep up. You won't have problems with this RAM as it's rated to run at the 400 MHz (200 MHz double pumped) needed to reach the 3200+, and it should have the ability to go higher than that. I didn't have time to play with the RAM settings, but you should be able to get a further performance boost by tweaking the RAM settings in your BIOS.

All that's left now is the stuff that's not directly applicable to gaming, but that you need anyway.

The DVD-ROM/CD-RW drive is plenty fit for burning, playing or gaming needs. I like to have a second CD-ROM drive for burning straight from CD to CD, but they can be picked up for cheap. Don't mistake this for a DVD-Writer though, if you want to burn DVD's you'll need to upgrade.

The system has a floppy drive – 'nuff said.

The Logitech wireless mouse and keyboard were fun to play try out, but I'm not really sold on the wireless peripheral revolution. The range from the base station is about 6', but I've never really had the desire to move the keyboard or mouse even that far from the computer, for the simple reason that the monitor to keyboard/mouse distance can only be so far before type is illegible, and because my desk is only so big. For me getting rid of the

cluster of cables is the only plus of a wireless setup, and it's balanced by the need to buy batteries for the keyboard, and recharge the mouse.

Another problem with this particular keyboard & mouse is the keyboard cable. Where the cable plugs into the computer, it also plugs into the power adapter, and the two wires were heavy enough to insert the plug from the computer. I periodically had to shove the plug back in to get the keyboard to work.

So what's missing? No monitor and no speakers. If you don't already have these kicking around from a previous system, remember to budget for them as well.

So is this system for you? Well, if you're looking at getting a whole new gaming machine, and it's in your budget, I'd say yes – it's a great gaming box, with all top quality components – a rarity for pre-built systems. Another plus is not having to do the finicky work of putting it together yourself. They've done a much better job of cable management than I would have. Also, if you don't want to get into details like how the speed of the Front-Side Bus determines whether you should be getting CAS2 PC3200 DDRAM, but just want a look and gaming machine, you can buy this one with the assurance that all the pieces are top quality, and you won't be kicking yourself for getting the wrong RAM for your motherboard.

On the other hand, you're talking about almost \$1900 with tax, and that's a lot of money to drop down on a gaming rig. Of course, good quality parts aren't cheap, the ATI Radeon 9800 Pro card still runs over \$500, but that's the price of buying one of the best. This may not be the fastest machine that money can buy, but in the price-to-performance arena, it's a good price for a high-performance machine. My only real complaint with the system is that I'd much rather see it with a Serial ATA hard drive instead of the wireless keyboard and mouse – a trade that would still leave you with around \$40 extra in your pocket. ■

# WiFi 802.11b

by Maine Cook

**W**iFi, or 802.11b as it is sometimes called, allows anyone with a wireless-enabled laptop to instantly connect to an access point (AP), usually within a 40-meter range. The AP is generally connected to a DSL or cable internet connection, which provides the high-speed access that modern internet applications demand. The passing of the seasons has once again returned Vancouver to its least enticing: cold, wet, and dark. For the next six months, gone are casual sunset strolls, patio dinners, and forest getaways. This is normal. Somehow we'll manage to keep ourselves mostly occupied and SAD-free.

For many this means a long winter in front of glowing boxes: televisions, video games, monitors, and increasingly over the past few years, laptops. With the coming Christmas season, many of the older boxes will also become laptops. In Seattle, café owners and patrons alike have taken the upsurge in mobile technology seriously and are working together to create a vibrant café culture.

On a recent visit to Zoka Coffee & Tea Co., I counted no less than thirty laptops and barely managed to find a seat. A common complaint at this busy café: Craig Kerrick, manager of Zoka's has seen an increase in business as a direct result of the wireless internet.

"Customers that came in before have started spending a lot more time here—it also attracts a lot of people that weren't coming in before at all."

The secret to Zoka's success, and that of at least 22 other cafés in Seattle alone, is that the wireless internet is free. The technology used to provide this invaluable service has dropped to such a low price that the added infrastructure to charge for service costs more than simply providing the service for

free. Often, café owners also have laptops that are tethered to the wall at home, all that's required to start the convergence is a wireless card that costs less than \$100.

Says Kerrick, "in its own way, it has increased community and increased interactions." With free access, people are migrating from their dark apartments to warmer surroundings, and bringing with them a new social vibrance. This is in Seattle, though, and in Vancouver we're still waiting for our own wireless revolution to hit the streets. ■

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# AMAZON HACKS

Amazonian through and through

by [illegible]

cover

backcover

I'd never use. Then there's the trick about adding an Amazon.com search box to your Web site — a topic already well covered on Amazon's site. Many of the hacks contained in this book are like that:

fun and cool to know, but not always very practical or can easily be found elsewhere.

Then there are the hacks that are interesting to a select few; as a published author with books sold on Amazon.com, I found the tips designed to help you track relative sales of real use. But outside people like myself or those in the publishing industry, there aren't likely to be too many people who would find this sort of thing useful.

The book is at its best when it is focused on things that can help people use Amazon.com to help them

make money, such as using their affiliate program, selling your used books through them, or building applications using Amazon's Web Services API. There are plenty of useful tips and lots of good code examples showing you how you can leverage Amazon's systems to your advantage, and how you can best socially engineer your selling to potential customers. It's good material, but I wish that there was more of it.

There's an old adage that goes "the best hack is a useful hack". Going by this, Amazon Hacks doesn't completely measure up. **B**

## NATIVE:

Information content: \*\*\*

Readability: \*\*\*\*

Intended for: Beginner / Intermediate

Overall Rating: \*\*\*

Contact: O'Reilly

The thing I just couldn't get away from while reading this book was: who is it for? There's no doubt that many of the "hacks" contained in the book are interesting, and there certainly are some ways in which you can use Amazon.com either to help you directly earn some money (through their affiliate program, or selling your used books for example) or use their online processing, but there's no one focus for this particular book. In this book you will learn more about how Amazon.com works, how you can become a hard-core affiliate or seller, and discover how you can use Amazon's Web Services to build your own applications, but it does not cover any one of these subjects fully.

Many of the hacks are "cute" — for example, there is a section devoted to displaying how you can manipulate the cover image for any given book, using certain text-strings to rotate the image, possibly rotate the cover a few degrees or even add a "30% off" tag to it. Interesting to know, and provides some insight as to how Amazon has developed a system to handle this sort of thing automatically, but useful to whom outside of Amazon itself? There's even a sample script that enables you to right-click on any word you run across on the Web take you straight away to books on Amazon on the same subject. This might save you a few mouse clicks, and I'm sure Amazon.com would love you to impulse-buy loads of books this way, but to me it seemed like a cool trick





# Go Big or Go Home!

by Geoff Weinberg



*The following is taken from an upcoming book by PerformancePC Executive Editor Geoff Weinberg - called Inside the Bubble - about his experiences in the "dot com" industry between 1999 and 2000. Chapter One was featured in the October issue of Computer Pro - and is still available online at:*

*[http://www.computerprocanada.com/content\\_insidethebubble.htm](http://www.computerprocanada.com/content_insidethebubble.htm)*

## Chapter Two - Decision Time

We arrived in Toronto after a long and cramped flight - more uncomfortable for Ian and his six foot six frame than for myself - and took a taxi to the Coast Hotel. Travelling on a tight budget, we shared a room with two double beds and spent a long time talking that night about the opportunities and the risks that lay in the next two days.

We also spent time on the phone - me talking to my wife Yvette and Ian talking to his fiancée Margaret - in a vain attempt to get some sort of sane perspective on what seemed like a fairly insane situation. Over the next several days, we walked ourselves through meetings and pitches with technology companies and PR firms as we positioned the services of Wine of Wily - even though we both knew that we might both be working for another company by the end of the week.

The only real excitement in these meetings came as we were having lunch in the leafy, garden restaurant attached to the hotel. Ian had just wrapped up a comprehensive overview of our services when I looked over at a planter near our table and noticed something stirring between the leaves of the potted plant. It was a mouse. We quickly alerted the waiting staff and they set off in search of the small rodent while we finished up our meals quickly and left. I suspect the mouse left quickly as well. We had moved his cheese.

Meanwhile, Ian and I debated. He understandably questioned what would happen if it didn't work out. What would we do? Where would we go?

I blithely assured him that we could simply resume doing what we had been doing before the dot com opportunity arose. After all, we weren't creating our own money in this venture. It was a public company with investors who were

clamoring to see a real online business created. How could we resist the chance to do this for them?

Ian wondered whether our options would yield a fair enough stake in the company. The salaries offered, while reasonable, were not what you would expect for senior executive positions in a high technology company. But we both knew that investors expected us to take risks alongside them - and that if all went well everyone would be rewarded handsomely as the business grew and the share price rose. Our rewards for hard work could come through the options first - and later through higher salaries. Or so the thinking went.

And then there was the whole question of what kind of business could be created. The opportunity, as we understood it, was to create an investment Web site with first-class content - and then to build components for interactivity and transactions. Revenue would initially come from advertising, while longer-term viability would come from allowing people to use the InvestmentLens site as the portal through which they could make all kinds of investments in a broad variety of financial instruments.

In hindsight, there was a lot of hubris in our deliberation. We assumed that through the partnership with Stockhouse (which was already one of the most heavily-visited financial Web sites in Canada at that point) and through creative use of advertising, we could drive lots of people to the Investment.com site.

And once they were there, how hard would it be to get them to look at investing opportunities from reputable partners? We would just charge the partners a small percentage fee for each transaction and would thus create a long-term, viable business for the company.

Once again, we stayed up long into the night, discussing the possibilities, probing the weaknesses of the plan and asking ourselves the question: but what if it worked?

After all this debate, I came to one inescapable conclusion - and Ian eventually shared it with me. Where else would you rather be, in the middle of the dot com revolution, than helping to build a dot com startup?

It was all too tempting - and on the week of July 5, 2000, Ian and I joined the five other people at Investment.com to begin our dot com journey. ■

## Computer Swap Meet

There will be a Big Computer Swap Meet on Sat Dec 6th from 11 am till 4pm at The Greater Cultural Centre 5850 Commercial Dr Vancouver

There will be a good selection of new and used computer items

Admission will be \$3.00, Kids under \$2.00

## BC TIA & BCIT Presents:

Moving Technology Out of the Lab and into the Real World

When people think of research they almost always envision purely research, where ideas are conceived and theories proven. While this type of research is vital to technological development, it represents only the first step as you are then to prototyping useful products and services. Further applied research is needed to move new technology out of the lab and into the real world

Thursday Nov 18th  
Pacific Peninsula Hotel  
1377 Robson Street  
11:30am Registration  
12:00pm Lunch  
12:30pm Presentations  
Members \$16.00 + GST  
Non-members \$35.00 + GST

## TechFutures: The Future of Open Source for Corporate IT Departments

The open-source movement is gradually making an impact in IT departments in major corporations worldwide. This trend is being supported by various factors internal and external to the software industry such as a growing level of confusion regarding what is Open Source, Open Standards and the future of the industry. This action packed panel will cover the pros and benefits of learning and developing in Open Source, the practical applications and how to deliver effective solutions to your company enterprise or to a client you may be building an application for. The expert panel is a wealth of legal experts, OEM experts, and enterprises that have used Open Source successfully and can add great value to those considering it.

Tuesday November 18th  
Four Seasons Hotel  
751 W. Georgia Street  
11:30 am Registration  
12:00 pm Lunch  
12:30 pm Presentations  
3:00 pm Close  
Members \$45  
Non-members \$95 + GST

## BC TIA's Winter Carnival

In the spirit of the giving season, this year's charitable event features fun and interactive games. Join us in "THE" technology industry's celebration of the year!

This is your chance to give back and help a great cause. All proceeds raised from this year's charitable activities will go to Covenant House. You can participate by making a gift donation to "Santa's Gift Day!" or by trying your luck with the carnival games.

Wednesday Dec 10th  
Milton Bingham Resort & Marina  
1621 Bingham Drive  
12:00pm Registration  
12:30pm-3:00pm  
Networking games, buffet and drive

Early Bird Special  
Cost: \$50 Members  
Non Members \$70

Registration after  
Nov 10th  
Members \$85  
Non-members \$95

Book a table of eight - get complimentary registration & save the \$50

Members \$400  
Non Members \$550

To register for these events visit [www.bcoia.org](http://www.bcoia.org) or call 604-683-8750

## PHP Vancouver User Group

The Vancouver PHP Association holds monthly meetings on the second Thursday of every month. Meetings usually start at 6:30, but it is a good idea to show up a few minutes early. The venue is generously donated by AcornServer and is held in their offices in downtown Vancouver at 580 Granville Street.

November 13 2003

## PHP Architectural Design Patterns

The November talk will discuss design patterns for building PHP applications. We will discuss choosing the most suitable architectural style to suit the different sized PHP applications.

Presentation will cover:

- Looking at the scale of the project
- Grouping projects with good guidelines
- Having the right development environment
- Loss of audience interaction, participation and idea exchange

## PHP Vancouver Conference

How from the experts in the PHP developer community about PHP introductions and business applications.

Who will attend?

- Developers
- ISP owners
- System Administrators
- Chief Technical Officers

## What is PHP?

Server-side scripting language for rapid web development.

- Open source, excellent code performance with widely extensible features
- Used on over 14 million different world wide domain websites

## Who is speaking?

Keynote speech is the co-inventor of PHP, Rasmus Lerdorf as well as other major players in the PHP open development community and speakers from the local tech industry.

## How can I help?

- Attend the event on January 23rd 2004
- Tell all your friends and colleagues about the conference

More info: <http://vancouver.php.net>

# Calendar of Events

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If you are interested in a contract and possess the above experience please reply in confidence to the email address below. Performance will be given to local candidates first.

#### Contact Information

Smith White  
Technical Recruiter / Office/Network Center  
Engineering  
Sawyer@teksys.com

### Engineering Manager

Aerostar is seeking the services of a Senior Engineering manager experienced working in the digital wireless technology industry. With 8-10 years of design and management experience supported by a university degree in Engineering, the successful applicant will have all of the following criteria:

A thorough understanding of digital signal processing and wireless communications including digital code architectures and modulation formats

Eight years of experience in hardware development, including digital hardware design, FPGA and/or ASIC development, custom VLSI, or VLSI embedded microprocessors and DSP processor development, high-speed computer buses and I/Os, and analogue hardware design

Working with other departments in the company to set priorities, drive strategic direction, and improve processes

Supporting and executing proper development processes, including documentation, reviews and testing, Developing Intellectual Property and growing a team's skills thereby providing complete system solutions for customers

Embedded software development

If you meet these criteria and are interested in this opportunity please send your resume in word format to the email address below.

#### Contact Information:

Peter McEwen  
Technical Recruiter / Office/Network Center  
Engineering  
Peter@petermcewen.com

### German Speaking

#### Technical Support Representative

The successful candidate will provide customer service by responding to problems or complaints that are of a technical nature in relation to the products and services of the organization

Interfaces with the customer via telephone, fax and email

May support sales staff and/or clients/consultants in determining the organization's capabilities to provide services based on the clients' requirements. Participates in "Technical Support" training and preparation of training materials

Candidates MUST be fluent in German or they will not be considered. As well they must have database and phone support experience, and a good understanding of data structures (X,Y,Z) (fixed length). Experience

with CADS, EXCEL and training experience is considered an asset

This is a permanent position. At this time, only local residents will be considered. Due to the number of applications, only those who are short-listed will be contacted

#### Contact Information

Raymond Sze  
Technical Recruiter - TEKsystems  
Raymond@teksystems.com

### Infrastructure Architect / Senior Server Support Specialist

The successful candidate will be responsible for the administration and support of a large Microsoft server environment. Other responsibilities will include designing, planning and overall improvement to our clients local area network, as well as upgrading their operating systems to Windows 2003

Successful candidates should have:  
Minimum of 8 years of solid IT experience  
Canada MOSC  
Bachelor's degree in a related field

Candidates MUST have a strong background with Active Directory and NT/2000 server migration and setup

This is a permanent position. At this time only local candidates will be considered. Due to the total amount of applicants, only those who are short-listed will be contacted.

#### Contact Information

Raymond Sze  
Technical Recruiter - TEKsystems  
Raymond@teksystems.com

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**Sales Specialist**

Based in Vancouver, this role will be responsible for sales of products and service offerings within large existing and prospective Commercial and Industry accounts. The Sales Specialist will provide Sales Expertise on CompuLink, HP, IBM, EMC, Hitachi and Sun Solutions, including Operating Systems and Storage Solutions to clients and Account Executives throughout British Columbia. The selected candidate will work with the account teams to qualify and develop sales opportunities for HPC and SAN solutions and will work with existing vendor management and sales support groups within the company to manage and ensure delivery of the solution to the client. Roles will include the entire sales cycle from opportunity identification and needs assessment through to solution implementation and delivery. This successful candidate will be expected to develop and execute a business plan that will enhance the fiscal goals and objectives of the role.

**Required Skills/Certifications:**

Minimum of 5+ years of relevant Sales Experience in Mid-Range and Storage Sales.  
Advanced knowledge and Sales certification in some or all of the following:  
IBM, CompuLink, HP, IBM, EMC, Hitachi or Sun and Storage Solutions, including Operating Systems and Network Management Solutions.  
Design or implementation experience would be an asset.  
Ability to develop relationships at all levels of an organization.  
Experience in producing Executive quality proposals and business cases.  
Solid account management and new business development skills.  
Excellent communication skills, documentation skills and presentation skills.  
Must be self-motivated and able to take ownership of both company and client goals.  
Stable employment history with a proven track record.

If you are interested in working for a dynamic organization and live in the Vancouver area, please email your resume to the following:

**Contact Information:**

Marcia Cohen  
Technical Recruiter -- TEKsystems  
MarciaC@teksystems.com

**Senior Web Developer**

TEKsystems is currently seeking a senior web developer to join their North American development team. You will work on high profile/high traffic web sites that support large eCommerce environments. The candidate will be working in a fast paced, typed web development environment that will help enhance existing online offerings and be an integral part in developing new websites.

This is a large working environment with the latest Net technologies and high-volume websites.  
Qualifications:

**Technical skills:**

Computer Science Degree or equivalent experience  
4+ Years of Internet application development experience, minimum 1 year project lead experience  
Microsoft Development experience with the following as mandatory: Visual Studio, Visual Basic, Visual InterDev, Visual Source Safe, Visual Studio .Net, Windows NT 4.0/2000, IS-483, ASP.Net  
Strong SQL Server 7.0/2000 skills, database design, administration and programming

**Other skills:**

Excellent interpersonal skills  
Application development and leadership in a team environment  
Project management

This will be either a long-term contract or permanent position.

**Contact Information:**

Marcia Cohen  
Technical Recruiter -- TEKsystems  
MarciaC@teksystems.com

**Business Analyst**

As the Business Analyst on the project you will be responsible for analyzing usability of the release and identifying differences from the job release. You will be required to develop a communications plan for the release to help ease the transition for users. You will also be responsible for preparing help files, user documentation, working with stakeholders, help desk and executing the design of a rollout plan for migration.

**Qualifications:**

To qualify for this position you will need to have a experience in the following:  
A strong grasp of usability and interface issues  
A strong understanding of user issues and presenting recommendations to user teams through the Internet, including a communication plan  
A strong understanding of high functioning web sites  
Experience in preparing well thought through implementation alternatives (e.g. big bang, gradual transition, parallel systems, etc.)  
Familiarity with web usability  
An ability/willingness to do it and acquire skills really fast  
User interface design experience  
Excellent writing skills, writing skills (include communication to user community as well as some technical writing)  
Basic DBMS skills  
Knowledge of internet level web services

General knowledge and understanding of Java based application technologies ( JSP, HTML, XML, Oracle, Java containers (JRunC) web servers and browser)

This is a contract opportunity working in a web environment. If you have experience in the above highlights and are available to start work with minimal notice in the Vancouver area, we would like to hear from you.

**Contact Information:**

Patricia Mitchell  
Technical Recruiter -- TEKsystems  
PatriciaM@teksystems.com

**Data Architect**

TEKsystems is looking for a Data Architect to join this team. As the Data Architect you will be responsible for development and administration of the SQL Server Database. You will also be responsible for modeling and designing relational OLTP and OLAP databases.

The selected Data Architect will have extensive experience in designing and optimizing database performance. They will also possess database modeling and design experience and be comfortable in working parameters to explain complex technical issues and present solutions.

To qualify for this position you must possess the following skills:

Five years work-related experience developing for and administering Microsoft SQL Server databases preferably in a WAN environment with nodes located throughout North America.  
Three years work-related experience modeling and designing relational OLTP and OLAP databases.  
Three years work-related experience in the design and development of GUI-based OLTP systems.  
Experience writing detailed database documentation as well as technical design documents.  
Experience writing UPS jobs and Replication of databases.  
Experience in managing and monitoring a team of technical professionals.

This is a full time permanent opportunity. If you are interested in expanding your career with a growing organization please send your word resume to:

**Contact Information:**

Patricia Mitchell  
Technical Recruiter -- TEKsystems  
PatriciaM@teksystems.com

# IT Supervisor

As the IT supervisor you will be responsible for a team of approximately 5 employees by coordinating their activities. You will also ensure department and corporate regional and department objectives are met and that regional and corporate policies and procedures are observed. As a member of the senior technical management department you will also oversee all levels of technical support for all network, desktop, server and phone system infrastructure.

## Additional Responsibilities include:

Ensure necessary tasks are completed and relevant schedules are met.

Serve as a link between technical and non-technical departments.

Monitor and maintain high customer service levels.

Project manage key IT initiatives.

Ensure services delivered as supported by IT department meet agency requirement through appropriate hardware, software, monitoring and backup.

Enforce security standards for desktops, servers and applications and monitor compliance to these standards.

Act as a mentor and encourage departmental development through technical knowledge transfer, training and certification.

Maintain staff by means of recruiting, selecting, training and training employees.

Accomplish staff results by means of clearly communicating job expectations, planning, monitoring and reviewing job results.

## To qualify for this position you must possess the following skills and experience:

IT supervisory experience /Project Management experience

5 years minimum experience as a technical IT role

MCSE: Windows NT 4.0 and CCNA designation or equivalent

Cisco Firewall and Router setup and administration skills

SQL Server administration skills would be an asset

Server and application security configuration and monitoring

Advanced Microsoft Back Office skills (Windows NT 4.0, Internet Explorer, Microsoft Word, MSN, DNS, DHCP services, Exchange 5.5, Servers, IIS and Windows Terminal Server with Citrix)

Available 24/7 to ensure uptime of critical services

Excellent time management/organization skills

Able to handle multiple tasks at once

## Education:

Technical or University diploma in computer science and information technology

www.performancepc.ca

Visit our website to enter the contest for your chance to

WIN



notePC Inspiron XP 100

If you meet the above requirements and are available to start work in Vancouver BC immediately we would like to hear from you.

## Contact Information:

Patrice Marcell

Technical Recruiter – TEOsystems

Patrice@teosystems.com

## SQL / Java developer

We are looking for a backend programmer to do the following tasks:

Is in the data model (already designed) and complete the implementation of the SQL2000 database.

Modify core VS applications to work with the new backend.

Modify and help rewrite core applications developed in Visual C++ - new development work will be done in Java.

Work with and help manage the internal resource, and assist with application support where required.

## To qualify for this position you must possess the following skills:

Minimum 3-5 years experience with SQL Server 2000

with application and data management scripts

Minimum 3-5 years experience with Visual Basic - able to modify programs for the new data model.

Minimum 3-5 years experience with Visual C++

Proven ability to read and write applications that utilize a basic Data structure (SQL driven)

Java programming and JML, primarily with current development, with some EJB and RMI experience

If you are local to the Vancouver Canada area and are available to start work with minimal notice, we would like to hear from you.

## Contact Information:

Patrice Marcell

Technical Recruiter – TEOsystems

Patrice@teosystems.com

## Oracle DBA

The ideal candidate will have excellent communication skills and be prepared to work in a growing team environment. As a key member of the development and support team you will have experience in a Peoplesoft environment performing a variety of a duties related to maintenance of the Oracle database. This will include software installations and upgrades, monitoring performance, capacity planning and quality assurance.

## To qualify for this position you will need to possess experience in the following areas:

Minimum 3-5 years experience as an Oracle DBA

Proven experience in security and backup

Proven experience in performing back up

Capable of providing emergency response

Experience in analyzing and repairing equipment errors

Proven experience working with Peoplesoft

This is a contract to hire position that is immediately available for a local candidate. If you were legally eligible a relocation to your work in Vancouver, Canada, we would like to hear from you.

## Contact Information:

Patrice Marcell

Technical Recruiter – TEOsystems

Patrice@teosystems.com

**Senior Web Developer**

As the Senior Web Developer you will be responsible for maintaining and updating the corporate web site as needed

To Qualify for this position you must possess the following skills and be able to provide an oral or legal then later to state that you have earned

**Requirements**

Minimum 3 years experience purely in web development  
Experience with Microsoft (Internet) Internet Architecture (DNA) XML, XSL, .NET Framework (ASP.NET, VB.NET)  
SQL 2000, IIS 3, IIS6  
ASP, Javascript, HTML, Web Development  
CRM development with Visual Basic

**Nice to Have, not required**

Data Warehouse Experience  
Analysis Services and Developing MDX Applications

**Preference will be given to those with the following certificates**

Microsoft Certified Solution Developer (MCSO) or  
Microsoft Certified Professional (MCP) coming in MCSO

**Contact Information**

Pradeep Mittal  
Technical Recruiter – TEKsystems  
[Pradeep@teksystems.com](mailto:Pradeep@teksystems.com)

**QA Lead**

TEKsystems is looking for motivated and organized team player to work on contract with our Vancouver based client. We are seeking an individual with an extensive experience as a QA Lead

As the QA Team Lead you will be required to interface with customers overseas, therefore must possess excellent communication skills in both English and Japanese (Written and verbal)

Reporting to the development manager you will be required to contribute to the overall quality and test cases of the software products. In this, you will need to direct and lead the test team in the following:  
Creating and executing tests  
Creating test plans and test cases  
Perform product compliance tests  
Perform overall verifiability and stress software tests

As the key interface with their client in Japan, you will be required to coordinate with other members of the QA and development team to achieve the above mission

To qualify for this position you must possess the following skills:

5-8 years experience as a QA Lead with a large organization  
5-8 years proven experience in establishing QA activities, including experience working in a QCC, Java and C/C++ environment  
You MUST have excellent English and Japanese communication capabilities (written and verbal)  
B.Sc. degree (computer science, Computer Engineering) or BGT Diploma or equivalent

**Contact Information:**  
Pradeep Mittal  
Technical Recruiter – TEKsystems  
[Pradeep@teksystems.com](mailto:Pradeep@teksystems.com)

**Intermediate Web Usability Specialist**

The successful candidate will join a team of Web Solutions experts who will design and execute highly usable web interfaces for e-Commerce applications. This is an immediate opportunity for an experienced consultant who is available to start with minimal notice.

**Ideal technical skills:**

3+ years experience in Human Computer Interaction (HCI)  
Software exposure to HTML and related technologies (eg. PHP) or be able to learn quickly before/on job/on-site

**Contact Information:**

Dan Curran  
Technical Recruiter – TEKsystems  
[DanCurran@teksystems.com](mailto:DanCurran@teksystems.com)

**Web Metrics Specialist**

The Metrics and Evaluation Specialist will primarily assist with the delivery of E-commerce projects and assist with Managing and processing client log files or other web site activity data

**Description:**

Integrating information pertaining to site activity analysis  
Preparing scheduled metrics reports  
Developing and implementing reporting and analysis technologies and systems  
Understanding research on technological and market developments related to site development techniques and technologies

**Additionally, the Metrics and Evaluation Specialist will assist in:**

Developing evaluation and metrics strategies  
Gathering and understanding clients' evaluation requirements and then effectively communicating key insights back to the client  
Understanding technical challenges related to online activity measurement and strategizing solutions in workshops

Ensuring that key insight and results are effectively communicated

A deep understanding of HTTP protocol and web page functionality is a must vs. dynamic content.  
Skill in statistical analysis techniques and methodology  
Strong interpersonal and oral and written communication skills

**Contact Information**

Don Dwyer  
Technical Recruiter – TEKsystems  
[DwyerD@teksystems.com](mailto:DwyerD@teksystems.com)

**Functional and Technical PeopleSoft HRMS consultants for existing and future projects.**

To qualify for this position for you must have experience working on PeopleSoft projects. Ideally you will have experience with a variety of the different HRMS modules (specifically Payroll, Time and Labor, HR, and Benefits)

Technical consultants will be expected to have knowledge of SDR PeopleCode, PeopleTools such as Application Designer, and Crystal Reports

If you are interested in pursuing PeopleSoft consulting opportunities, please contact

**Contact Information**

Molly Huber  
Technical Recruiter – TEKsystems  
[mhuber@teksystems.com](mailto:mhuber@teksystems.com)

**DB2 DBA**

The successful candidate will be responsible for the day-to-day administration of DB2 and AS/400 systems. They may also be occasionally involved

In order to qualify for this position, you must have the following skills and experience:

DB2 experience on AS/400  
Experience in AS/400 and experience as a DB2 environment  
Ability to take business requirements and turn them into technical specifications

This position is a permanent position and therefore only candidates eligible to work in Canada will be considered

**Contact Information:**

Louise's Poirier  
Technical Recruiter – TEKsystems  
[Lpoirier@teksystems.com](mailto:Lpoirier@teksystems.com)

## **IT/ Operations Support**

The qualified candidate will be responsible for the following:  
Scheduling O/S and applications maintenance  
Responding to and resolving in a timely manner any system errors.  
Ensuring all appropriate systems software and services are monitored and functional on all clients, verifying that the server security and applications are maintained and are at all times allowed for optimal direction of network, server or application problems.

### **Specific responsibilities include**

Support, respond and update trouble tickets in Remedy/Service System in a timely manner.  
Participate in the rotation of on-call 24/7 support providing coverage for the IT/ servers and applications.  
Perform system installs, system images, system restores, database restores, log file collection, and data transfer on requests.  
Perform system re-builds and application installs.  
Promote C/ applications from the development platform to the QA environment.  
Promote the C/ applications into production.  
The successful candidate will possess the following skills and competencies:  
In depth knowledge of data networking, Windows NT/OS, C/ and HR functionality.  
Knowledge of scripting, searching, server security.  
Knowledge of convergence technology including: VoIP, networks and associated customer hardware.  
Call centre technology including C/ and soft phone.  
PC skills including word processing, spreadsheets, database, internet.  
Ability to translate and communicate technical problems into layperson terms.

### **Contact Information:**

Louanna Poirier  
Technical Recruiter – TELsystems  
Lpoirier@tel-systems.com

## **Network / Desktop Support**

TELsystems is currently looking for an individual to work as a team in the Network/Management support group. This group is responsible for support of infrastructure systems support ranging from User to Windows based network/desktop support services. The current need exists due to new client Customer Work (20% Desktop Support and 40% Network Admin).

These candidates should have strong networking/troubleshooting skills in Windows/MCS3 platform  
Microsoft Active Directory / DNS

## **Exchange 2000/5.5**

Working and hands on experience with various management tools like Exch, SMS

### **Like to have**

Good, BMC Remedy  
Excellent customer service levels over the phone so they will be providing support instantly  
Work with several in an open environment  
Interact effectively with team members and other teams  
Provide assistance to Front System Administrators for group systems  
Handle concurrent problems of various magnitude  
Oversee/act on thousands of client production issues  
Self work starting 4400m-5:00pm

### **Duties:**

Respond promptly to client service calls pertaining to both user issues and system problems  
Troubleshoot system problems and escalate when necessary  
Occasionally coordinate trouble shooting issues and update internal knowledge database  
Monitor existing tools to prevent capacity or performance problems  
Participate in group meetings and distribute relevant information to the team  
Stay current with upcoming system changes and recognize possible impacts  
Stay in touch for the diagnosed problems that may have customer impact  
Provide follow-up with customer to keep them abreast of outstanding problems  
Coordinate resources with other support groups to resolve problems for desktop desktop applications, network, security administration, setup, problem & change management  
Provide documentation and support assistance to the Help Desk to improve their resolution skills  
Contact Information  
Louanna Poirier  
Technical Recruiter – TELsystems  
Lpoirier@tel-systems.com

## **Systems Architect**

TELsystems located in the Vancouver, Montreal is seeking a Systems Architect to join their team. While this role will be based out of Vancouver Canada, they will be travel associated with the role.

In the role of Systems Architect you will be responsible for the architecture and implementation of mission critical Enterprise Solutions utilizing Windows

2000 technology. You will build management, technical and planning skills by participating in large projects and leading teams. You will impress your managers to think creatively, design solutions, and interact with customers. You will contribute to a vast repository of intellectual property when you design and build the solutions that will set the standard for the future of business.

In addition to the high-level responsibilities outlined above, you will also have a "hands on" role as we build implementation projects.

The ideal candidate for this role will have prior experience working in a consulting capacity in a similar role, and will have worked rather large clients (1000+ users).

Experience is also required with the following technologies and skills:  
Good prior level Exchange Migration experience (1000+ users)  
Ability to design systems at the highest level using Windows 2003/Exchange 2003 technology  
Migration / Implementation of a large Windows 2003 Deployment of servers (1000+ servers)  
SQL Server infrastructure experiences  
Network services and protocols (TCP/IP, IPX/SPX, NetBIU, Ethernet, Fast Ethernet, Token Ring, FDDI, ATM, AppleTalk, Intranets, FI, E/I)  
Network infrastructures (LAN, WAN) custom switches, hubs, routers, wiring)  
Complex infrastructure design of ECommerce solutions from a systems standpoint  
Security concepts (Active Directory, Kerberos, PKI, DMZs and Proxy Servers)  
SAN Storage architecture and implementation on EMC, NetStor, Dell Storage as well as RAID 5 arrays on large multiplatform environments  
Bibliographies, management (Systems Management Server, helpdesk, SAMP)  
Candidates must have had large teams, directly in a consulting capacity using a structured methodology  
Ability to interact with executive level management  
Experience qualifying business development prospects

If you are interested in pursuing this opportunity, please forward your resume to:

### **Contact Information:**

Molly Huber  
Technical Recruiter – TELsystems  
mhuber@tel-systems.com

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**Remember to Join Us Next Time  
604.638.0666 or [adco@performancepcocanada.com](mailto:adco@performancepcocanada.com)**

**LEP**

CPU Intel Celeron 3.4 GHz  
Motherboard Asus P4B530-MX  
Ram 256MB DDR333  
I/O Ports 4 x USB 2.0 / 1 parallel  
Lan 10/100 ethernet  
Video Card integrated 3D Graphics  
Monitor 15.30BS 17" CRT  
Hard Drive 40GB 7200rpm (SATA)  
Optical Device 16X CD-RW  
Sound Card 5-channel audio code  
Speakers 3pc speaker system

Printer Epson Stylus C44  
Scanner BenQ 4500U USB  
Case 17" tower with 300W

Extras: Intel USB connectors  
Mouse Wheel Mouse with pad  
Keyboard internet keyboard  
Software MS Windows XP Home

Warranty 3 year parts and 5 year  
labor limited warranty

Price \$899  
Shipping extra  
PST \$49.93  
GST \$69.93  
URL www.lep.com  
Phone 800-939-9625

**IBM**

CPU Intel Pentium 4, 2.66 GHz  
Motherboard Intel 865G chipset  
Ram 256MB  
I/O Ports 8 serial USB 2.0 ports  
Lan Integrated Intel PRO/100  
Ethernet  
Video Card Intel Extreme Graphics 2  
Monitor n/a  
Hard Drive 40 GB ATA 100  
Optical Device CD-ROM 8X Max  
Sound Card SoundMAX Creative  
Speakers IBM Stereo Speakers

Printer n/a  
Scanner n/a  
Case Vertical Tower (4x5)

Extras:  
Mouse IBM USB Optical Wheel  
Mouse  
Keyboard IBM ProFit Access Rn  
Keyboard  
Software Microsoft Windows XP  
Home Edition, Lotus SmartSuite  
Multimedia Access, Lotus Notes  
SecuritySuite Client License, Access  
IBM 4.0

Warranty IBM On-Site Repair (24h)  
One year parts and labor

Price CAD \$999.00  
Shipping extra  
PST \$74.93  
GST \$89.93  
URL <http://www-133.ibm.com>  
Phone 1-888-9-IBM

**DELL**

CPU Pentium® 4 Processor w/  
2.66GHz with 512MB RAM  
Motherboard Intel 865PE Chipset  
w/ Dual channel Intel DDRAM support  
Ram 512MB Dual Channel DDR  
SDRAM w/ 533MHz  
I/O Ports 1 USB 1.1 USB 2.0 ports - 2  
firewire back  
Lan Integrated 10/100 Ethernet  
Video Card 64MB DDR NVIDIA  
 GeForce MX Graphics Card with TV-  
Out and DVI  
Monitor 17 in (16 in viewable, 270p)  
17.1" DVI Mono  
Hard Drive 80GB Ultra ATA/100 Hard  
Drive (7200 RPM)  
Optical Drive 14.9x CD-RW Drive  
with Sonic Recordable  
16x DVD-ROM Drive  
Sound Card Integrated 5.1 Channel  
Capable Audio  
Speakers Desktop Stereo Speakers

Printer n/a  
Scanner n/a  
Case

Extras 4 Months of AOL Go-Flip  
Internet Access (Month 5 & 6)  
Mouse Dell 2-Button Small Mouse  
Keyboard Dell™ Keyboard™ Keyboard  
Software Microsoft® Windows® XP  
Home Edition - English™ \*Not Perfect  
Protectivity Pack and Mouse  
4 Months of AOL On-Up Internet  
Access (Month 5 & 6)  
Dell Picture Studio Image Expert  
Standard™

Warranty 1 Year Limited Warranty  
plus 1 Year On-Site Service and  
CompleteCare

Price CAD \$899.00  
Shipping \$129  
PST \$95.35  
GST \$75.95  
URL <http://www.1cs.dell.com>  
Phone 1-822-466-9311

**Gateway**

CPU Intel® Celeron Processor 2.4GHz  
w/ 128 Cache  
Motherboard  
Ram 256MB DDR SDRAM  
I/O Ports 8 USB (2 in front and 4  
rear in back) Parallel, Serial, and (2)  
PS/2 (USB Version with Win XP is  
2.0 Win 2000 1.1)  
Lan Integrated Intel® 10/100  
Ethernet Adapter  
Video Card Integrated Intel® Extreme  
Graphics with up to 64MB dynamic  
video memory  
Monitor 17" Color Flatrate  
Modem 56K PCI Data/Fax modem  
Hard Drive 40GB Ultra ATA100  
3450rpm lat at drive  
Optical Device 18x/16x/4x CD-RW  
Sound Card Integrated Enhanced  
Audio  
Speakers 2-piece speaker solution

Printer n/a  
Scanner n/a  
Case Gateway Micro-Tower Case

Extras:  
Mouse Logitech PS/2 Wheel Mouse  
Keyboard IBM® Keyboard

OS Microsoft® Windows® XP®  
Professional  
Software Microsoft® Works 7.0  
 Norton AntiVirus 8.0 day Introductory  
Edition

Warranty Value Service Plan (30day  
Parts/Labor/No Downtime/24 hr Technical  
Support)

Price CAD \$949.40  
Shipping extra  
PST \$111.10  
GST \$69.35  
URL <http://www.gateway.com/>  
Tel 1-800-359-1752

**eMachine**

CPU Intel® Celeron® 2.60 GHz  
Processor 128KB L2 cache  
Motherboard Intel 845GL Chipset  
Ram 256 MB DDR (PC 2100)  
I/O Ports 6 USB 2.0 ports (2 on  
front - 1 Serial, 1 Parallel), 2 PS/2,  
Audio-In & Out  
Lan 10/100Mbps built-in Ethernet  
Video Card Intel Extreme Graphics 3D  
64MB Shared Memory  
Monitor 17.1" 15 inches Flat Panel,

ISA 1024 x 128 Max  
Hard Drive 60 GB HDD  
Optical Drive 48x Max CD-RW  
Barr 16x Ultra DVD Drive, 3.5"  
144MB FDD  
Sound Card AC 97 Audio  
Speakers Amplified Stereo Speakers

Printer n/a  
Scanner n/a  
Case

Extras:  
Mouse 2-Button Wheel Mouse  
Keyboard Smaller Multimedia  
Keyboard  
Software Microsoft® Windows® XP  
Home Edition, Microsoft Works 6.0,  
Microsoft Money 2002, Internet  
Online, Adobe® Acrobat® Reader™  
Microsoft Music, Paint, Best Player,  
Power2Go Internet Explorer  
Netpage™, Netpage, MSN™,  
CompuLink™, AOL (with 3 months  
membership included™), Norton  
Antivirus 2002

Warranty 3-year guarantee on  
Parts and Labor

Price CAD \$29.995  
Shipping extra  
PST \$38.75  
GST \$65.10  
URL <http://www.emachines.com/>  
Phone 1-800-827-1410

**MSI**

CPU Intel® Celeron® Processor 2.4  
GHz  
Motherboard INTEL 845GLA P4  
MAINBOARD USB2.0  
Ram 256MB RAM MEMORY  
I/O Ports  
Lan n/a  
Video Card INTEL EXTREME 256BIT  
ENHANCED 3D GRAPHICS  
Monitor 17 INCH SAMTRON 75W  
MONITOR  
Hard Drive 120GB IDE HARD DRIVE  
7200 RPM  
Optical Drive 16X/10X/4X CD-RW IDE  
INTERNAL  
Sound Card SOUNDMA 3D SOUND  
SPX 6 MIC PREAMPLIFIER  
3 speakers: 800W PMPO SPEAKERS  
WITH SUBWOOFER

Printer n/a  
Scanner n/a  
Case



Extra  
Mouse MICROSOFT INTELL MOUSE  
PS/2  
Keyboard MICROSOFT MINIMET KEY  
BOARD  
Software MICROSOFT® WINDOWS®  
XP HOME MS WORKS SUITE 2002  
DEM

Price: CAD \$888  
Shipping extra  
PST \$24.95  
GST \$68.06  
URL: <http://www.mcg.ca/>  
Phone: 1-877-929-8624

# **ABS**

CPU AMD Athlon XP 2400+/3500  
FSB 2600  
Motherboard Gateway GA-7V1000L  
VIA KT600  
Ram Cuscut/Micron 512 MB PC-  
2700  
I/O Ports  
Two Onboard Ethernet 10/100 LAN  
Controller  
Video Card: Windows Geforce4 chipset  
64mb DDR video card, model  
MX460E1  
Monitor n/a  
Hard Drive: Western Digital 80GB  
7200RPM 8MB Cache  
Optical Drives: "Laser" 16x DVD-ROM  
16x CD-ROM Drive  
Ultra-160 SCSI2467 CD/RW Drive  
Sound Card: 6-channel 5.1 Channel  
Audio CODEC 5.1  
Speakers: Logitech Zen-75 Black Stereo  
2 Piece speaker

Printer n/a  
Scanner n/a  
Case: Aspen Desktop ATX Case Model  
AB05A (Black w/ front USB 2.0)

Extras "Cradle Mouse T19B2  
Cooling Unit (Cradle 478) Firewall  
and Fire Model JWS614"  
Mouse: Mitsumi Keyboard and fire  
key  
Keyboard: Mitsumi Keyboard and fire  
key  
OS: Microsoft Windows XP Home  
with Service Pack 1a  
Software: Corel Office WordPerfect 11  
DEM

Warranty: 1 Year Parts and Lifetime  
Labor and Lifetime Tech Support  
30-day money back guarantee

Price: \$899.00  
Shipping: extra  
PST: \$74.95  
GST: \$68.06  
URL: [www.abccan.com](http://www.abccan.com)  
Phone: 1-800-875-8868

# **Asus (more on p. 2, 40)**

CPU AMD ATHLON XP 2500+ 612K  
SOPB8 SOCKET A BARTON RETAIL  
BOX 2YR MFR WARRANTY  
Motherboard ASUS ATXNEX  
WFOCE1 400 SOCKET4 AGP8x SPD  
USB 2.0 ATA133 SOUND LAN  
Ram SAMSUNG 512MB PC2700  
DDR40 1MBIN CFM  
I/O Ports n/a  
Len n/a  
Video Card: SOUTER GEFORCE FX  
5200 AGP 64MB DDR VSA 011 TV  
OUT  
Monitor n/a  
Hard Drive: SEAGATE BARRACUDA  
7200.7 80GB 16.4MB/100 5.4MB  
7200 DEM  
Optical Drives: LG DCF-8208 CD/RW  
52X24X12 NT FIRE 40MB 80MB RW  
SW  
Sound Card: Integrated Digital Audio  
Speakers: Amplified Stereo Speakers

Printer n/a  
Scanner n/a  
Case: AMTEC SUX2500AMS CASE  
MID TOWER ATX12V P4 300W P/S  
405.75 410 5.1 BRNUTX

Extras  
Mouse: OPTICAL MOUSE DEM (WITH  
SYSTEM ONLY)  
Keyboard: MICROSOFT NATURAL KEY  
BOARD  
Software: n/a

Warranty: PC ASSEMBLY AND TEST-  
ING (PRE-CONFIG OS IF PURCHASED)

Price: CAD 799.995  
Shipping: Available (2-4 days)  
PST: \$57.75  
GST: \$53.60  
URL: [www.asus.com](http://www.asus.com)  
Phone: 1-800-463-1416

# **TigerDirect (more on p. 20, 29)**

CPU Intel® Pentium® 4 2.4GHz  
Processor  
Motherboard: n/a  
Ram: 512MB PC2700 DDR Memory  
I/O Ports: 8 USB 2.0 ports (2 on

board, 1 Serial, 1 Parallel, 2 PS/2,  
Audio-In & Out  
Len: 10/100Mbps built-in Ethernet  
Video Card: 32 550 32MB AGP  
Video  
Monitor: n/a  
Hard Drive: 80 GB HDD  
Optical Drives: CD/RW Drive DVD/RM  
Drive  
Sound Card: AC 97 Audio  
Speakers: Amplified Stereo Speakers

Printer: n/a  
Scanner: n/a  
Case:  
Extras:  
Mouse: PS/2 2-button Wheel Mouse  
Keyboard: PS/2 Median Internet  
Keyboard  
Software: Microsoft® Windows® XP  
Home Edition

Warranty: One-year guarantee on  
Parts and Labor

Price: CAD 808.995  
Shipping:  
PST: \$50.75  
GST: \$55.70  
URL: <http://www.spectra.com>  
Phone: 1-800-463-1416

# **Fractal (more on p.3)**

CPU: INTEL Pentium 4 2.8GHz  
GG479R S47R 13m HT 512K  
Motherboard: ASUS P4 547R (GG3P)  
EX40P 300R 6PC1 4/1/1552 0  
Ram: KINGSTON DDR 512MB  
400MHz PC2000 CL3  
I/O Ports  
Len  
Video Card: AGP8x GeForce 4  
MX460 64M DDR w/TVout  
(Retail)  
Monitor: n/a  
Hard Drive: SEAGATE BARRACUDA  
80GB (ULTRA ATA-100) 7200.7  
SATA Drive: LG CD/RW 52x24x12  
16x8496RPM/80 5W (DEM)  
Sound Card: Integrated Digital Audio  
Speakers: TFWO 5P6E1 Stereo  
Speakers 60W

Printer: n/a  
Scanner: n/a  
Case: Fractal T8 with 607K 4/2 AGP  
w/350W P/S PS

Extras:  
Mouse: Logitech Z8-BT/OCZ Fire

Mouse: w/whirl (31 M)  
Keyboard: LOGITECH UltraX ACS  
Internet Keyboard (Retail)  
Software:

Warranty:

Price: CAD 969.995  
Shipping:  
PST: \$59.97  
GST: \$61.67  
URL: <http://www.fractal.com/PC/build.aspx>  
Phone: 804-739-8300

# **Intertech (more on p.11)**

CPU AMD Athlon™ XP 2600+  
Processor with DurantSpeed™  
technology  
Motherboard: Shuttle AM55M  
MB04A™ v1.0a2  
Ram: 256 MB DDR (PC 2700)  
I/O Ports: 8 USB 2.0 ports (2 on back,  
4 on front), 1 Serial, 1 Parallel, 2  
PS/2, Audio-In & Out  
Len: 10/100Mbps built-in Ethernet  
Video Card: ATI 2600 64M DDR 1X  
AGP  
Monitor: Evesync 17" Flat Monitor  
Hard Drive: 80 GB HDD  
Optical Drives: 52X CD/RW Burner  
Sound Card: nVidia™ 5.1 Channel  
Audio  
Speakers: Amplified Stereo Speakers  
with Sub

Printer n/a  
Scanner n/a  
Case: 500W Dual Fan

Extras:  
Mouse: Special Notebook  
Keyboard: Keyboard  
OS: Microsoft® Windows® XP Home  
with Manual  
Software:  
Warranty: 2 Years Parts and Labour  
Warranty:

Price: \$999  
Shipping: extra  
PST: \$65.75  
GST: \$70.00  
URL: [www.intertech.ca](http://www.intertech.ca)  
Phone: 804-673-7337

**LEF**

CPU: Intel® P4 2.6 GHz 600/150  
 Motherboard: Intel® D865GBR  
 Ram: 512MB DDR400 (Dual chnl)  
 I/O Ports: 8 x USB / 1 x parallel  
 Lan: Intel® 10/100 ethernet  
 Video Card: NVIDIA GeForce 5200SE 128MB  
 DCR  
 Monitor: LG 17100H 17" Flat CRT  
 Hard Drive: 80GB 7200rpm (SATA)  
 Optical Device: 16 DVD / 20RW  
 combo  
 Sound Card: 8-channel audio codec  
 Speakers: Creative 5pc speakers sys.  
 W/O

Printer: Epson Stylus C84  
 Scanner: Scan® S2000 USB  
 Case: 17" tower with 30W

Extras: front USB connection  
 Mouse: MS Optical mouse  
 Keyboard: MS Multimedia keyboard  
 Software: MS Windows XP Home  
 Warranty: 3 years parts and 5 yrs  
 labor; limited warranty

Price: \$1,789  
 Shipping: none  
 P&H: \$124.99  
 GST: \$129.90  
 URL: [www.let.com](http://www.let.com)  
 Phone: 804-303-5439

**MSI**

CPU: Intel® Pentium® 4 with Hyper-  
 Threading Technology 3.0GHz  
 Motherboard: Intel® 955X chipset  
 Ram: 512MB  
 I/O Ports: 8 total USB 2.0 ports  
 Lan: Integrated Intel® PRO/100  
 Ethernet  
 Video Card: Intel® Extreme Graphics 2  
 Monitor: n/a  
 Hard Drive: 40GB EIDE 7200rpm  
 Optical Device: CD-ROM 48X Max  
 Sound Card: SoundMAX Audio  
 Speakers: Integrated Main Speaker

Printer: n/a  
 Scanner: n/a  
 Case: Vertical Tower (4x5)

Extras:  
 Mouse: IBM USB Optical Wheel  
 Mouse  
 Keyboard: IBM Professional Pro Function  
 Keyboard  
 Software: Microsoft Windows XP  
 Professional / Lotus SmartSuite  
 Millennium (Outlook), Lotus Notes

Sound-card: Creative® Audigy  
 IBM 4 x  
 Warranty: On Site Three year parts  
 and labor

Price: CAD \$1,849.99  
 Shipping: none  
 P&H: \$144.25  
 GST: \$136.50  
 URL: <http://www.T32.com>  
 Phone: 1-888-8TOP-IBM

**DELL**

CPU: Intel® Pentium® 4 Processor at  
 3.0GHz w/ 800MHz FSB & HT  
 Technology  
 Motherboard: Intel® E75P chipset  
 with 80GB  
 Ram: 512MB DDR SDRAM at  
 400MHz  
 I/O Ports: 1 USB 8 USB 2.0 ports - 2  
 front/6 back  
 Lan: Integrated Intel® PRO 10/100  
 Ethernet  
 Video Card: 64 MB DDR NVIDIA  
 GeForce4 MX Graphic Card with TV-  
 Out and DVI  
 Monitor: Dell 19" M982  
 Hard Drive: 80GB Ultra ATA/100 Hard  
 Drive  
 Optical Device: 16 max DVD-Ram  
 Sound Card: Sound Blaster Live! 5.1  
 Card with Dolby Digital 5.1/Compatibility  
 Speakers: Harmon Kardon® HS-585  
 Speakers with Subwoofer

Printer: n/a  
 Scanner: n/a  
 Case:

Extras: 4 Months of AOL OneUp  
 Internet Access (Monitor 9.9)  
 Mouse: Dell 2 Button Scroll Mouse  
 Keyboard: Dell® Enhanced  
 Multimedia Keyboard  
 Software: Microsoft® Windows® XP  
 Home Edition - English  
 Warranty: 3 Yr Ltd. Warranty, 4 Yr In-  
 Home/On-Site Service, 24x7 Phone  
 Hardware Tech Support, 365 days a  
 year

Price: CAD \$2009  
 Shipping: \$159  
 P&H: \$169.00  
 GST: \$150.96  
 URL: <http://www.Lcd.dell.com>  
 Phone: 1-800-955-DELL

**Gateway**

CPU: Intel® Pentium® 4 Processor  
 2.6GHz  
 Motherboard: Intel® E75P chipset  
 Ram: 256MB PC3200 400MHz DDR  
 SDRAM dual channel  
 I/O Ports: 8 USB 2.0 (2 in front and  
 6 in back), (1) Serial, (1) Parallel (2)  
 PS/2, (1) RJ-45 integrated LAN (1)  
 VGA  
 Lan: Integrated Intel® 80/100/1000  
 Gigabit Ethernet Adapter  
 Video Card: 32MB NVIDIA™  
 GeForce2 MX200 AGP Graphics  
 Monitor: 17" Color Monitor  
 Modem: 56K PCI Data/Fax modem  
 Hard Drive: 80GB Ultra ATA/100  
 7200rpm hard drive  
 Optical Device: 24x/16x CD\_RW  
 Sound Card: Sound Blaster AudioPCI  
 1280  
 Speakers: 2-space speaker solution

Printer: n/a  
 Scanner: n/a

Case: 7-bay tower case w/ 250-watt  
 power supply  
 Extras:  
 Mouse: Logitech PS/2 Wheel Mouse  
 Keyboard: 104+ Keyboard  
 OS: Microsoft® Windows® XP  
 Professional  
 Software: Microsoft® Office Basic  
 Edition 2003 (Intel® OfficeDesk Client  
 Manager Software v4.3)  
 Warranty: 3Yr Parts Labor Service  
 Limited Hardware Tech Support for as  
 long as you own it

Price: CAD \$1,855.48  
 Shipping: none  
 P&H: \$144.00  
 GST: \$138.88  
<http://resource.gateway.com/>  
 Tel: 1-800-387-1752

**eMachine**

CPU: AMD Athlon™ XP 2800+  
 Processor (2.083 GHz) with  
 DualSpeed™ architecture  
 Motherboard: NVIDIA® nForce™2  
 Ram: 512 MB DDR (PC 2400)  
 I/O Ports: 8 USB 2.0 ports (4 in back,  
 1 in Media Remote), 1 Serial, 1  
 Parallel, 2 PS/2, Audio in & out  
 Lan: 10/100Mbps built-in Ethernet  
 Video Card: NVIDIA® GeForce4™ MX  
 graphics (1 AGP (in slot available))  
 Monitor: E157, 15 inches Flat Panel,  
 XGA 1024 x 768 Max.

Hard Drive: 80GB HDD  
 Optical Device: 4x DVD-R, 2 4x  
 DVD-RW

Sound Card: nForce™ 4-channel  
 Audio  
 Speakers: Amplified Stereo Speakers

Printer: n/a  
 Scanner: n/a  
 Case:

Extras:  
 Mouse: 3-Button Wheel Mouse  
 Keyboard: Premium Plus Multimedia  
 Keyboard  
 Software: Microsoft® Windows® XP  
 Home Edition, Microsoft Works 9.0,  
 Microsoft Money 2004, iStock  
 Online Photo Easy CD 6 DVD Camera  
 Basic Edition, Adobe® Acrobat®  
 Reader™, Microsoft Media Player  
 Real Player, Power DVD, Internet  
 Explorer, Netscape® Navigator  
 8.0SP™, CompuServe™, AOL (with 3  
 month membership included\*)  
 Norton AntiVirus 2003  
 Warranty: One-year guarantee on  
 Parts and Labor

Price: CAD 1119.999  
 Shipping: none  
 P&H: \$84.00  
 GST: \$119.40  
 Phone:

**MSI**

CPU: Intel® Pentium® 4 Processor  
 2.4 GHz  
 Motherboard: Intel® 955GBL  
 Motherboard  
 Ram: 512MB KINGSTON MEMORY  
 I/O Ports:  
 Video Card: INTEL EXTREME 32-BT  
 ENHANCED 3D GRAPHICS  
 Monitor: SAMSUNG 17" LCD MONI-  
 TOR  
 Hard Drive: SAMSUNG 160GB 7200  
 RPM 8MB DRAM 01M  
 Optical Device: 24x/48x DVD Writer  
 Sound Card: SOUNDMAX 3D SOUND  
 SPX 5 MIC PPE AMP 170W  
 Speakers: 5.0W PMP SPK 170W  
 WITH SUBWOOFER

Printer: LEBARAK 375 ALL IN ONE  
 PRINTER  
 Scanner: n/a  
 Case:

Extra:  
Mouse: MICROSOFT OPTICAL MOUSE  
Keyboard: MICROSOFT INTERNET KEYBOARD  
Software: MICROSOFT™ MSN/MSN™  
XP HOME MS WORKS SUITE 2002  
CDM  
Return Policy  
  
Price: CAD \$1955  
Shipping: none  
PST: \$148.62  
GST: \$128.95  
URL: <http://www.mtg.ca/>  
Phone: 1-877-800-8034

# **ABS**

CPU: AMD Athlon XP 2700+/5203  
FSB 250K  
Motherboard: Asus ATX400 Delta  
iForce 2 Chipset  
RAM: Sola 256MB PC3200 400 MHz  
CDM  
I/O Ports: 6 USB 2.0 2 AGP/PCI 6X AGP  
LAN  
Lan: Integrated Ethernet 10/100  
Video Card: ASUS GeForce FX5200  
MB 600 W/ TV OUT 17" CRT 1280  
Monitor: NEC 17" CRT 1280  
Hard Drive: Seagate Barracuda 120GB  
7200RPM 8MB Cache Serial ATA  
ATA-100  
Optical Drive: "Laser 16x DVD-ROM  
Laser One 5200S 40x CD-RW Drive",  
Sony CDRW/FW Recorder Drive  
Model: DRW-U14A Black Bulk Pack w/  
Software  
Sound Card: NVIDIA soundStorm  
Audio Processor Unit with Dolby Digital  
Codec  
Speakers: Creative Future Flyspe 2.1 300W  
SPE Speakers Set

Printer: n/a  
Scanner: n/a  
Case: Asus Performance P4 Case LE  
model

Extras: "Cable Modem: T1-882  
CoolLog Intel (Socket 478) Hardware  
and Test Model J40001A"  
Mouse: Microsoft optical wheel  
mouse  
Keyboard: Microsoft multimedia key-  
board

OS: Microsoft Windows XP Home  
with Service Pack 1a  
Software: Sony Half Lix Platinum  
Driver 2. PC Game + Microsoft  
Works Suite 2002, Mozilla Firefox

Version 1.0 with One Year of Updates  
CDM  
Warranty: "1 Year Parts and Labour  
Life and Lifetime Tech Support  
30-day money back guarantee"  
  
Price: \$1,520.00  
Shipping: extra  
PST: \$144.00  
GST: \$124.42  
URL: [www.sage.com](http://www.sage.com)  
Phone: 1-800-875-8056

# **BCOM (more on p. 2, 40)**

CPU: INTEL PENTIUM 4 P4 2.6GHz E  
STEOR800FSB 3476 HT RETAIL BOX  
Motherboard: INTEL NORBPERILL P4  
3476 886PE DUAL 600 SPC SDR  
RAM SOUND LAN 1004 BOM  
RAM: SAMSUNG 512MB PC3200  
BOM/BOX 100MHz CDM  
I/O Ports: n/a  
Lan: n/a  
Video Card: ATI RADEON 9800 PRO  
128MB AGP VGA DVI TV OUT  
RETAIL BOX  
Monitor: n/a  
Hard Drive: SEAGATE BARRACUDA  
ATA 120GB 7200RPM IDE 5-MS  
2MB ALAMOD CDM 1YR  
Optical Drive: TOSHIBA 16X DVD  
ROM CD-RW 40x LITHIUM 5200S2  
40X 17" CRT 1280/1024 300W  
BOM CDM W/ SOFTWARE  
Sound Card: Integrated Digital Audio  
Speakers: CREATIVE MEDIAWORKS  
S60 5.1 THX CERTIFIED 500W

Printer: n/a  
Scanner: n/a  
Case: ACUTE PLUSVIEWTOSAM  
21IN CASE 405 2X 6X 5 NO P/S W/  
WINDOW SIDE PANEL

Extras:  
Mouse: MICROSOFT WIRELESS OPTI-  
CAL REPAIRS  
Keyboard: MUSE COMBO CDM  
Software: n/a

Warranty: PC ASSEMBLY AND TEST-  
ING 90-DAYS OR 90 DAYS/3000  
HOURS

Price: CAD 1945.99  
Shipping: Available (2-4 days)  
PST: \$148.00  
GST: \$130.29  
Url: [www.bocom.com](http://www.bocom.com)  
Phone: 1-800-637-1418

# **TigerDirect (more on p. 20, 21)**

CPU: Intel® Pentium 4 2.66GHz  
Processor  
Motherboard: 800MHz Front Side  
Bus/Intel® 810P Chipset  
RAM: 512 MB DDR (PC 2700)  
I/O Ports: 5 USB 2.0 ports 4 in back,  
1 in Media Bay(s) 1 Serial 1  
Parallel 2 PS/2 Audio 5 Out  
Lan: 10/100Mbps built-in Ethernet  
Video Card: 64MB NVIDIA® GeForce  
5600SE AGP 8x Video  
Monitor: n/a  
Hard Drive: 40GB ATA/100 7200RPM  
Hard Drive  
Optical Drive: DVD-RW Drive  
Sound Card: Integrated Digital Audio  
Speakers: n/a

Printer: n/a  
Scanner: n/a  
Case: n/a

Extras:  
Mouse: HP Easy Access Keyboard  
Keyboard: HP Compact USB Serial  
Mouse  
Software: Windows XP Professional  
Warranty

Price: CAD 1622.99  
Shipping:  
PST: \$128.13  
GST: \$127.61  
Url: <http://www.tigerdirect.ca>  
Phone: 1-800-537-7413

# **Fractal (more on p.3)**

CPU: AMD Athlon 64 3200+ BOX  
T1MPN  
Motherboard: ASUS AMD 64 2504  
VIA K7800 SPC 800M APER SAMA  
HT Audio/LAN  
RAM: KINGSTON DDR 512MB  
400MHz PC3200 CL2.5  
I/O Ports  
Lan  
Video Card: ASUS V5200 60X/2700  
MAGC 128M DR/AGP/8X/ATI  
(Retail)  
Monitor: n/a  
Hard Drive: SEAGATE BARRACUDA  
80GB ULTRA 4M 100 7200 7  
Optical Drive: 16 CD/RW 52x/24x-  
48x/10x/24x 500 (CDM)  
Sound Card: Integrated Digital Audio  
Speakers: 5.1/600 SPC/81 Stereo  
Speakers 60W

Printer: n/a  
Scanner: n/a

Case: Fractal 16 inch 517X472 370,  
w/350W P4 PS  
Extra:  
Mouse: Logitech 28 OPTICAL Firm  
Mouse+ wheel (CDM)  
Keyboard: LOGITECH Deluxe ACS  
Internet Keyboard (Retail)  
Software: n/a  
Warranty: n/a

Price: CAD 1445.07  
Shipping:  
PST: \$108.21  
GST: \$100.00  
Url: <http://www.fractal.com/PCBuilder.aspx>  
Phone: 034-738-8000

# **Interlock (more on p.18)**

CPU: AMD Athlon™ XP 2200+  
Processor with SpeedStep™  
architecture  
Motherboard: Gigabyte 7V400  
Main:  
RAM: 1 GB DDR-400  
I/O Ports: 6 USB 2.0 ports 1 Serial  
Parallel 2 PS/2 Audio 5 Out  
Lan: 10/100Mbps built-in Ethernet  
Video Card: ATI 9800 128M CDM 8X  
AGP  
Monitor: Samsung 753DF 17" Flat  
Screen Monitor  
Hard Drive: 120 GB 8 MB Cache  
S-ATA HDD  
Optical Drive: DVD/CDRW Combo  
Drive  
Sound Card: Sound Blaster Audigy 2  
Speakers: Amplified Stereo Speakers  
with Sub

Printer: n/a  
Scanner: n/a  
Case: 530W Dual Fan

Extras:  
Mouse: MS Optical Mouse  
Keyboard: MS Multimedia Keyboard  
OS: Microsoft® Windows® XP  
Professional w/Mini CD  
Software:  
Warranty: 3 Year Parts and Labour  
Warranty

Price: \$1264  
Shipping: none  
PST: \$148.65  
GST: \$138.78  
URL: [www.interlockpc.com](http://www.interlockpc.com)  
Phone: 034-912-7227

**GE**

**CPU** Intel P4 3.2 GHz 800MHz  
**Motherboard** Intel D865PERL  
**Ram** 612MB DDR400 (dual-channel)  
**I/O Ports** 6 x USB / 1 x parallel /  
 1 x Intel 810TC Ethernet  
**Video Card** Radeon 9800 256MB  
**DDR**  
**Monitor** LG 1705 17" LCD  
**Hard Drive** 7200RPM SATA 8MB  
**Optical Drive** LG DVD+R RW  
**Sound Card** Creative Audigy 2  
**Speakers** Creative 5.1 speakers

**Printer** n/a  
**Scanner** n/a  
**Case** 17" tower with 300W

**Extra** Next USB connection  
**Mouse** MS Speed mouse  
**Keyboard** MS Multimedia keyboard  
**Software** MS Windows XP Pro

**Warranty** 3 yrs parts and 5 yrs  
 labor limited warranty

**Price** \$2,675  
**Shipping** none  
**PSI** \$233.03  
**CSI** \$208.95  
**URL** www.ge.com  
**Phone** 800-333-9829

**IBM**

**CPU** Intel® Pentium® 4 with Hyper-  
 Threading Technology 3.0GHz  
**Motherboard** Intel 865G chipset  
**Ram** 1024MB DDR SDRAM,  
 Nonparity  
**I/O Ports** 8 total USB 2.0 ports  
 1 x Intel PRO/1000 Gigabit Ethernet  
 w/Link on LAN  
**Video Card** 84MB DDR Media  
 Carded-250 MVS Dual VGA  
**Monitor** n/a  
**Hard Drive** 80GB 7200rpm ATA 100  
 (FutureLink IDE)  
**Optical Drive** 16x Max DVD-ROM  
 Internal Drive  
**Sound Card** SoundMAX Cardbus  
**Speakers** 8M Pro Power Extension  
**Speakers** Stereo Black

**Printer** n/a  
**Scanner** n/a  
**Case** Vertical Tower (4x5)

**Extra**  
**Mouse** IBM USB Optical Wheel  
**Mouse**  
**Keyboard** IBM Pro-learn Pro Foliolet

**Keyboard**

**Software** Microsoft Windows XP  
 Professional, Lotus SmartSuite  
 Millennium (optional), Lotus Notes  
 Serviceable Client (optional), Access  
 IBM i.0  
**Warranty** On Site Three year parts  
 and labor

**Price** CAD \$2,995  
**Shipping** none  
**PSI** \$233.88  
**CSI** \$208.94  
**URL** <http://www.102.com/>  
**Phone** 1-888-5-HOT-IBM

**DELL**

**CPU** Intel® Pentium® 4 Processor  
 with Hyper-Threading Technology at  
 3.0GHz with 800MHz FSB  
**Motherboard** Intel® 875P chipset  
 with 82565  
**Ram** 1024MB DDR SDRAM at  
 400MHz  
**I/O Ports** 1 USB 1.1 USB 2.0 port- 2  
 front/8 back  
**Primary IDE Channel** 40pin connect  
 front/8 back  
**Secondary IDE Channel** 40pin con-  
 nector on PCI local bus  
**LAN** Integrated Intel® PRO 10/100  
 Ethernet

**Video Card** New 128MB GeForce FX  
 5200 Graphics Card with TV-Out  
**Monitor** Dell 17" W171P (170")  
 WYS Flat Panel Display  
**Hard Drive** 120GB 5x1 ATA Hard  
 Drive 7200RPM  
**Optical Drive** 48x/24x/48x CD-RW  
 Drive with Power Easy CD Creator®  
 4x DVD-R/4x RW Drive with CD-RW  
 (for purchase with 10x DVD-ROM  
 Drive)  
**Sound Card** Sound Blaster  
**Audigy™ 2 (0)** Card w/5.1 Audio  
 and Dolby 5.1 in profile  
**Speakers** Premium Center™ HW 385  
 Speakers with Subwoofer

**Printer** n/a  
**Scanner** n/a  
**Case**

**Extra**  
**Mouse** Dell optical USB Mouse  
**Keyboard** Dell™ Enhanced  
 Multimedia Keyboard

**Software** Microsoft® Windows® XP  
 Home Edition - English

"Microsoft® Work System including  
 Money, Mail Security Center by  
 McAfee, 60 Day introductory offer  
 40%OFF) Dell Junction powered by  
 MICROSOFT® Dell Protect Studio  
 Image Export Standard Dell Media  
 Experience™"

**Warranty** 3 Yr Dell Warranty 4 Yr In-  
 Home/On-Site Service 24x7 Phone  
 Hardware Tech Support, 365 days a  
 year

**Price** CAD \$2,933.00  
**Shipping** \$138  
**PSI** \$238.85  
**CSI** \$214.34  
**URL** <http://www1.dell.com>  
**Phone** 1-822-444-4444

**Gigabyte**

**CPU** Intel® Pentium® 4 Processor  
 3.0GHz with Hyper-Threading  
 Technology  
**Motherboard** Intel® 875P chipset  
**Ram** 512MB 400MHz DDR SDRAM  
 (32x16MB modules)  
**I/O Ports** 8 USB 2.0 (4 at front and  
 4 on back) Parallel, Serial and CD-  
 PS/2  
**LAN** Integrated Intel® 10/100/1000  
 Ethernet (Gigabit) adapter with com-  
 mercialized networking architecture  
 (CSA)  
**Video Card** 128MB ATI Radeon  
 9800S with TR and on Off  
**Monitor** 17" LCD Flat  
**Medium** 68x PD Drive/No media  
**Hard Drive** 160GB serial ATA hard  
 drive w/ 8MB performance enhancing  
 cache  
**Optical Drive** 24x/16x/48x CD-RW  
 Recorder and 48x/24x/48x CD-RW  
 with Power2Go Expressos 2.0  
**Sound Card** SoundBlaster Audio 2  
 Audio w/ IEEE 1394 FireWire  
**Speakers** 21 Speaker Solution with  
 Subwoofer

**Printer** n/a  
**Scanner** n/a  
**Case** Gateway Tower Case

**Extra** 3 bay tower case w/ 250-watt  
 power supply  
**Mouse** Logitech PS/2 Wheel Mouse  
 (no mouse pad included)  
**Keyboard** Multi-function Keyboard

**OS** Microsoft® Windows® XP Home  
 Edition

**Software** Microsoft® Works Suite  
 2004 including Microsoft® Word  
 and Excel  
**Security** Virus Service (Free/16  
 Pass/1600 No Country/1.6 Technical  
 Support

**Price** CAD \$2,719.99  
**Shipping** none  
**PSI** \$208.42  
**CSI** \$194.92  
**URL** <http://www.gateway.com/>  
**Tel** 1-800-367-7752

**HP**

**CPU** Intel® Pentium® 4 Processor  
 3.0 GHz with HT Technology  
**Motherboard** Intel 865G  
 100MHz/SATA Motherboard  
**I/O Ports**  
 1 x PCI 10/100/1000  
 1 x PCI  
 1 x PCI 10/100  
**Video Card** ATI RADEON ALL IN WON  
 DER 1600 64MB AGP  
**Monitor** SAMSUNG 17" LCD MONI-  
 TOR

**Hard Drive** SAMSUNG 160GB 7200  
 RPM HARD DRIVE 0.5M  
**Optical Drive** SATA/ATA DVD Writer

**Sound Card** Dolby Digital 5.1 & other  
 net SoundMax Sound, Digital In and  
 Out  
**Speakers** 800W PMPO SPEAKERS  
 WITH SUBWOOFER

**Printer** SAMSUNG 1440 LASER  
 PRINTER  
**Scanner** n/a  
**Case**

**Extra**  
**Mouse** MICROSOFT WHEEL  
 MOUSE  
**Keyboard** MICROSOFT NFR 635  
 BT/SCAND  
**Software** MICROSOFT® WINDOWS®  
 XP HOME

**Return Policy**

**Price** CAD \$2938  
**Shipping** none  
**PSI** \$238.95  
**CSI** \$206.93  
**URL** <http://www.hp.ca/>  
**Phone** 1-877-625-8634

**AMS**

**CPU:** Intel Pentium 4 3.0GHz 512K  
**OS:** MSN 150  
**Motherboard:** Intel® E7SP (800MHz)  
**MSB:** Intel® E7SP (800MHz)  
**RAM:** Quantity 2 of Corsair 2GB  
**PCB:** 1000 (1000) (2) XMS  
**I/O Ports:**  
**LAN:** Integrated network Controller  
**Video Card:** Sapphire Radeon 9800  
**PSU:** 120W Dual/Tri 8X AGP  
**Monitor:** n/a  
**Hard Drive:** Quantity 2 of Seagate  
**OS:** 7200rpm  
**Optical Device:** C (DVD) +/- RW 4x DVD  
**Reconfigurable Drive Model:** HD-7200A/  
**Sony DVD+/RW Recorder Drive**  
**Model:** DW-1647A Black Safe Rock w/  
**Software:**  
**Sound Card:** Sound Blaster Audigy  
**Sound Card:** w/ 128MB Firewire Port  
**Speakers:** Pioneer Audio 50 Stereo  
**PC Hardware:** with 4-Line Volume and  
**Mute Control**  
**Printer:** n/a  
**Scanner:** n/a  
**Case:** Asus Performance Platinum LE  
**(Landed Edition)** With Side Panel  
**Window and Front Case Hinges**

**Case:** "Quantity of 4 Cooler Master  
**TL-F82**  
**Zelator:** CMPS-7000-CJ Pure Copper  
**CPU Cooler**  
**Quantity 2 of 180cm SFR | SERIAL**  
**ATA 154 | Cable 2 Hand**  
**Item:** ATA-133 (10) 18" 3H Pound  
**Cable Transports BLUE RIL \***  
**Mouse:** Microsoft Special Intelli  
**Mouse Explorer Version 3 Co**  
**Keyboard:** Intextron (Zoom)  
**Intouchingible Keyboard Status**  
**System**  
**OS:** Microsoft Windows XP  
**Professional with Service Pack 1a**  
**Software:** Microsoft Vista Suite  
**2005 | Microsoft WordScan Version 6.0**  
**with One file of Updates | Servo-**  
**Half Life Problem Edition 2 | PC**  
**Game**  
**Warranty:** "2Year 1 Year 24/7 Tech  
**Support & Drive Service**  
**30-day money back guarantee"**

**Price:** \$2,850.00  
**Shipping:** extra  
**PS:** \$271.87  
**OS:** \$270.00  
**URL:** [www.amspc.com](http://www.amspc.com)  
**Phone:** 1-800-876-8088

**WEEK (more on p. 2, 40)**

**CPU:** AMD ATHLON XP 2800+ 512K  
**32GB 500MB BARTON SOCKET A RETAIL**  
**DDR 512MB 1GB 1GB 1GB 1GB**  
**Motherboard:** ASUS A7N8X DELUXE  
**SOCKETA LEG5 FORCED AGPFX**  
**FIREWIRE SERIAL ATA AUDIO LAN**  
**RAM:** CORSAIR MAJOR SELECT DUAL  
**CHANNEL 1334MB KIT PC3700 500**  
**CAGE 5 2GB2GB**  
**I/O Ports:**  
**LAN:** n/a  
**Video Card:** ATI RADEON 9800 PRO  
**128MB AGP VGA DVI TV OUT**  
**RETAIL BOX**  
**Monitor:** n/a  
**Hard Drive:** SEAGATE BARRACLUDA  
**ATA V 120GB 7200RPM IDE 5 4MS**  
**2MB ATA133 IDE 1MB 1TB**  
**Optical Device:** SONY DVA/DCA  
**DVD+R/RW DVD+R/RW 4X4 4X8**  
**CORSAIR 24X10832 BLACK INT ICE**  
**DEM**  
**Sound Card:** CREATIVE SOUND-  
**BLASTER AUDIOT 2 PD 348W W/**  
**88136A DEM**  
**Speakers:** CREATIVE M55AWQHS  
**S&B 10 THX CERTIFIED 800W**

**Printer:** n/a  
**Scanner:** n/a  
**Case:** ASUS EDWARD DUAL CHANNEL  
**ATA 15.25 5 5 5 RAMD BLACK**  
**880W TRUEPOWER**

**Mouse:** LOGITECH M550 HIGH PER-  
**FORMANCE OPTICAL MOUSE USB**  
**PS/2 800DPI**  
**Keyboard:** LOGITECH FITE KEYBOARD  
**BLACK/MULTI-ANGULAR USB PS/2**  
**Software:** n/a

**Warranty**

**Price:** CAD 2224.98  
**Shipping:** Available (2-4 days)  
**PS:** \$180.07  
**OS:** \$125.75  
**URL:** [www.week.com](http://www.week.com)  
**Phone:** 1-888-884-8888

**TigerDirect (more on p. 20, 21)**

**CPU:** Intel® Pentium 4 3.0GHz  
**Processor**  
**Motherboard:** 800MHz Front Side  
**Bus/Intel® E7SP Copper**  
**RAM:** 1GB (1GB) PC2000 DDR  
**Memory**  
**I/O Ports:** High Speed USB 2.0 and  
**FireWire Interface & High Speed USB**

**2.0 (2 mm) Audio by/DA/MC Parallel**  
**Serial**  
**LAN:** 10/100 Mbps Ethernet MC MX  
**152 Voice for Modem**  
**Video Card:** 256MB DDR MEMORY  
**Forces 9800 AGP 8X Video**  
**Monitor:** n/a  
**Hard Drive:** 80GB ATA/100  
**7200RPM Hard Drive**  
**Optical Device:** DVD-RW Drive  
**Sound Card:** 3D Integrated Sound (5-  
**Channel Audio)**  
**Speakers:** Creative Labs® Inspire 5.1  
**5200 Speakers**

**Printer:** n/a  
**Scanner:** n/a  
**Case:** Silver Mid Tower chassis w/  
**430Watt Power Supply**

**Extra:**  
**Mouse:** Wireless Logitech® Keyboard  
**and Optical Scroll Mouse**  
**Keyboard:** HP Optical USB Scroll  
**Mouse**  
**Software:** Microsoft® Windows XP  
**Professional Edition**  
**Warranty:**

**Price:** CAD 2664.99  
**Shipping:**  
**PS:** \$182.37  
**OS:** \$129.55  
**URL:** <http://www.tigerdirect.com>  
**Phone:** 1-888-463-1418

**Frontier (more on p. 20)**

**CPU:** Intel® Pentium 4 3.0GHz HT  
**Processor**  
**Motherboard:** ASUS AMO 54 575A  
**ATA 157500 SPD 300R AGPFX S&B**  
**RT AGP/LAN**  
**RAM:** KINGSTON DDR 512MB  
**400MHz (PC200) (1.5)**  
**I/O Ports:**  
**LAN:** Intel Pro/100  
**Video Card:** ASUS V8000 G9X8000  
**128MB DDR 8X AGP/16MB/Quad**  
**(Retail)**  
**Monitor:** n/a  
**Hard Drive:** SEAGATE® BARRACLUDA  
**160GB SERIAL ATA 7200rpm 8MBR**  
**Optical Device:** 16 DPM 52x26x2  
**MAX/16X/16X 5W (10M)**  
**Sound Card:** CREATIVE SOUND-  
**BLASTER Live! Doby Optical 5.1**  
**500W**  
**Speakers:** PMP0 SP681 Stereo  
**Speakers 50W**

**Printer:** n/a

**Scanner:** n/a  
**Case:** Frontier TB with 512K 4/2 ATX  
**w/350W PA PS**

**Extra:**  
**Mouse:** Logitech Z3 OPTICAL First  
**Mouse w/wired 100M**  
**Keyboard:** LOGITECH Bealon AC5  
**Internet Keyboard (Rear)**  
**Software:** n/a

**Warranty:** n/a

**Price:** CAD 2169.99  
**Shipping:**  
**PS:** \$182.37  
**OS:** \$129.55  
**URL:** <http://www.frontier.com/PCorder.aspx>  
**Phone:** 800-338-8000

**InterTech (more on p. 11)**

**CPU:** Intel Pentium 4 3.2GHz 512K  
**800 MHz FSB**  
**Motherboard:** Gigabyte EP1 1000  
**Pro-2**  
**RAM:** 1 GB DDR400  
**I/O Ports:** 6 USB 2.0 ports 1 Serial, 1  
**Parallel, 2 PS/2, Audio In & Out**  
**LAN:** 10/100Mbps LAN/10 Ethernet  
**Video Card:** MSI 256 17" LCD Panel  
**Monitor:** Samsung 753P 17" Flat  
**Screen Monitor**  
**Hard Drive:** 160 GB 8 MB Cache  
**SATA HDD**  
**Optical Device:** DVD/CDRW Combo  
**Drive**  
**Sound Card:** Sound Blaster Audigy 2  
**Speakers:** Amplified Stereo Speakers  
**with Sub**

**Printer:** n/a  
**Scanner:** n/a  
**Case:** 500W Dual Fan

**Extra:**  
**Mouse:** MS Optical Mouse  
**Keyboard:** MS Multimedia Keyboard

**OS:** Microsoft® Windows® XP  
**Professional with Manual**  
**Software**  
**Warranty:** 2 Years Parts and Labor  
**Warranty**

**Price:** \$2,562  
**Shipping:** extra  
**PS:** \$182.35  
**OS:** \$129.54  
**URL:** [www.intertech.com](http://www.intertech.com)  
**Phone:** 800-603-7337

## THUNDERBOLT

HC Computers Inc.  
208-8870 Imperial St  
V&J 767  
(804) 457-6016  
Compul 2808  
108 2896 Henning Drive  
VSC 895  
(804) 436-2330

Elmer Computers  
1683 - 4580 Kingsway  
(804) 438-3218

**MOZ.com (p.2, 40)**  
5068 Kingsway  
VSH 257  
(804) 451-8882  
[www.moz.com](http://www.moz.com)  
[sales@moz.com](mailto:sales@moz.com)

Access Computer Rentals Inc.  
(804) 257-3138

Alpine Computers  
(804) 476-8833

Big Planet Computers  
(804) 261-8653

Dorian Computers  
(804) 433-8858

Laptop Computers  
(804) 528-1770

## CHRYSLER

Elmer Computers  
201-483 North Rd.  
VSA 285  
(804) 831-8888

Ever Tech Computers  
(804) 837-4727

F & S Computers  
(804) 837-3712

Messiah Computers Ltd  
(804) 845-7541

One Plus Computer Inc.  
(804) 384-1171

Westwood Computers  
(804) 842-8870

## FLORIDA

AsusTech Computers  
(804) 951-2376

## DANIELLY

ATOP Computer  
20788 Emsw Hwy  
VSA 418  
(804) 574-9180

Star Cyber Computers  
(804) 862-8833

Star's Computers  
(804) 534-3887

Walrus Grove Computers  
(804) 889-3873

Whisper Computers Ltd  
(804) 889-8013

## MAPLE RIDGE

Photo Time Computers  
(804) 480-8555

Technique Computers  
(804) 486-8377

## NEW BRUNSWICK

Am I PC Computers  
(804) 540-8222

Bro N Bytes Computers  
(804) 520-1838

Laptop Computers  
(804) 521-4242

## NORTH CAROLINA

AsusTech Computers  
(804) 884-8217

Evergreen Computers Inc.  
(804) 884-3182

W & S Computers  
(804) 989-7880

## SOUTH CAROLINA

Almer Computer  
118 2088 Loughlin Hwy  
VSB 148  
(804) 488-8285

Laser Computers  
(804) 945-8218

## ROSE RIDGE

Ever Tech Computers  
(804) 937-4728

## RICHMOND

Beach Computers  
163-2258 Po S Road  
VSA 271  
(804) 389-8828  
AllLink Computer System  
132 12111 Bridgeport Rd  
VSA 144  
(804) 214-8473

Informa Technology Inc.  
186 11403 Bridgeport Rd  
VSA 172  
(804) 834-7147/23  
A & J Macintosh Computers  
(804) 276-2812

## City Computer Systems (p.1)

#150 - 12880 Clark Place  
VSA 287  
(804) 278-3767  
[www.citycomputer.com](http://www.citycomputer.com)  
[citycomputer@citelink.net](mailto:citycomputer@citelink.net)

Discovery Computers  
(804) 247-0412

Jazzam Computers Inc.  
(804) 275-8882

JRS Computers Inc.  
(804) 273-3185

UCF Advanced Technology Ltd  
(804) 303-8628

Moss Computers Inc.  
(804) 275-2811

## MOI Internet Inc. (p.17)

#128 - 23881 Simpson Rd.  
VSA 282  
(804) 288-1880  
[www.moi.com](http://www.moi.com)  
[info@moi.com](mailto:info@moi.com)

PC Computers  
(804) 273-8832

T & L Computers Inc.  
(804) 273-8838

Ten Tech Computer Systems  
(804) 287-8338

Take-A-Byte Computers  
(804) 271-2222

Unique Personal Computers  
(804) 448-2387

## SANDEY

Genius Top Computer  
18789 128th St  
VST 529  
(804) 688-8838

ATOP Computer  
13083 136A St  
VST 481  
(804) 630-4838

Ann Computers  
(804) 543-9298

AsusTech Computers  
(804) 891-4000

G & S Computers  
(804) 588-3655

Service Computer Ltd  
(804) 535-8855

Ten Tech Computers Ltd  
(804) 834-4738

## WALPOLE

A/R Computers  
45 E Broadway  
VST 794  
(804) 875-8838

Perigee Computers  
5 111 W Broadway  
VST 174  
(804) 273-8528

## MOZ.com (p.2, 40)

1043 W Broadway  
VSL 115  
(804) 739-8885  
[www.moz.com](http://www.moz.com)  
[sales@moz.com](mailto:sales@moz.com)

## FrontierPC.com (p.3)

105-1755 N Broadway  
VSL 485  
(804) 739-8888  
<http://www.frontierpc.com>  
[info@frontierpc.com](mailto:info@frontierpc.com)

## Intertech Computers (p.11)

4317 Fraser St.  
VSA 404  
(804) 872-7337  
[www.intertechpc.com](http://www.intertechpc.com)  
[nyk@intertechpc.com](mailto:nyk@intertechpc.com)

1st Data Recovery.com  
745-1253 W Parker St.  
VSE 337  
(804) 881-3770

## Neacode Software (p.22)

258-425 Canal St  
VSB 883  
(804) 838-8888  
[www.neacodesoftware.com](http://www.neacodesoftware.com)  
[sales@neacodesoftware.com](mailto:sales@neacodesoftware.com)

Accurate Computers  
8 Sandhill Ln  
(804) 250-7777

Ade Computers Ltd  
(804) 822-8838

Beach Computers  
(804) 879-4888

Dot Computers &  
Communications  
(804) 873-3337

Code II Computers Inc.  
(804) 875-8888

Compatible Computers Inc.  
(804) 382-8822

Dock Computers & Service  
(804) 438-4383

E Global Computers Inc.  
(804) 873-8235

Business Pro Computers  
(804) 871-8784

Essi Computers  
(804) 435-1101

Horton Computers  
(804) 872-7100

Len Computers  
(804) 438-5271

Liquid Computers  
(804) 278-8888

Metaphor Computers Inc.  
(804) 255-5572

Unreal Computers  
(804) 730-1285

Wasa Computers  
(804) 732-8887

Varsity Computers  
(804) 222-2323

Westworld Computers Ltd  
(804) 732-4475

## UNITED

**TigaDirect.com (p.26,27)**  
171 Emsw Park Drive  
Madison, Ontario L3R 4J1  
1-800-800-8300  
[www.tiga-direct.com](http://www.tiga-direct.com)

# Directory Listing

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or fax to 833.9685

# Neo|Code Software Ltd.

## Developer Services

### Case Study: Fine Arts Engraving

#### Challenge

Fine Arts Engraving wanted to publish and host an application to 30,000 IBM Global Service employees around the world. After the acquisition of Fine Water House Cooper's competing division, IBM had an immediate need to merge business units and businesses for its large number of employees, who had just joined the corporation. Fine Arts Engraving was the company responsible for this task, yet more project. Since all Fine Arts Engraving online-order sites are customized to each client's needs, in order to manage this project, Fine Arts Engraving was looking for a developer service that could help them to design and build a custom web-based application, which will automate and simplify the order process.

#### Solution

As a result, Fine Arts Engraving came to Neo Code for assistance. Within 14 days, the application was developed, published, and hosted. Our talented and experienced programmers wrote the program in just 7 days, and it was hosted for a week. In order to meet our client's deadline, our programmers dedicated themselves to work around the clock to have the job done in the best possible way.

#### Result

Fine Arts Engraving quickly opened the custom application to IBM Global Service employees worldwide. More than 30,000 IBM employees from around the world used the application to place their orders online. All orders were completed with speed and accuracy, which translate into happy customers, and satisfactory services.

## the Complete Package

We offer a complete online solution for custom development and integration services with business-to-business selling. Our services include: e-commerce Registration, e-commerce Management and e-commerce Administration tools and technologies. We are to develop and integrate IBM's Pro software (i.e. IBM WebSphere, J2EE and MS SQL, JSP).

We also offer hosting plans for web sites and databases. Our hosting plans give you more value than our competitors because we limit the number of clients that we will host per copy of FileMaker Pro software. By not overloading a copy of FileMaker Pro software with too many clients, we enhance stability and performance, giving better access and increasing downtime.

We currently host over 100 completed web sites globally. Our programs have been used by clients across North America and globally. 400,000 users. Selected full-time staff members under 30, each addition of new users available on demand as a part of our 24-hour support.

#288-425 Carrall St., Vancouver, BC, V6B 6E3

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